

D103.122/4:91-2

# THE DEH REFERENCE BOOK



US Army Engineering and Housing Support Center

CHSC Form 91-2  
December 1990

A90054388A

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## **FOREWORD**

### **THE CHIEF OF ENGINEERS**

The Army's Directors of Engineering and Housing are responsible for a wide range of complex programs that require great emphasis on excellence. This reference guide provides current information on many of the most important programs and challenges that face you in serving soldiers, civilians, and families at installations worldwide. I strongly encourage you to become an expert in working with these vital programs, and to use this information to plan, program, and budget for the future of your installations. Your ability to develop long range resource programs will make a significant improvement in our facilities in the future.



H. J. HATCH  
Lieutenant General, USA  
Chief of Engineers

A90054388A

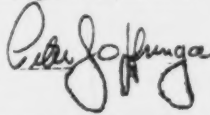




# **INTRODUCTION**

## **THE ASSISTANT CHIEF OF ENGINEERS**

This DEH Reference Book offers executive summaries of facilities engineering, housing, and natural resources management topics to assist you as you plan and maintain communities of excellence worldwide. Your ability to program fixed costs, annual recurring requirements, backlog of maintenance and repair, deferred maintenance and repair, and environmental requirements will capture resources for your community in future years. I wish to emphasize that all programming and planning actions lead to the next Program Objective Memorandum (POM) currently scheduled for the 1st quarter of FY92. The POM will cover fiscal years 1994 through 1999, and now is the time to develop your plan.



PETER J. OFFRINGA  
Major General, USA  
Assistant Chief of Engineers

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# GUIDANCE FOR NEWLY ASSIGNED DEHS

Before you arrive at the installation to which you have been assigned, send the following questionnaire to your

Deputy DEH. Answers to these questions will help get you up to speed on the situation you will meet upon arriving at your new job.

## DEPUTY DIRECTOR, ENGINEERING AND HOUSING

Please provide the following to me as soon as possible:

### GENERAL ORGANIZATIONAL

- DEH diagram
- Diagram - installation organization
- Info on ACOE Program
- If in-house craft work force, copy of TDA
- If no in-house craft work force, copy of contract
- Information on Job Order Contracting (JOC) program
- Copies of performance plans for GS 12s and above
- List of recurring maintenance and repair contracts
- Copies of contracts for custodial and refuse services
- Current FY training plan for DEH employees
- Results of most recent IG inspection

### HOUSING

- 5-year plans for each set of General Officer quarters
- 5-year plan for other quarters (if available)
- Housing area maps with current FY projects marked with cost per dwelling, number of dwellings, and estimated start and completion dates
- Copies of letters of delegation of project approval authority
- Current year budget by account
- Next fiscal year projected budget
- Troop furniture inventory by type and age (if available)
- Last annual General Officer Quarters cost report and current FY quarterly reports

### ENGINEERING PLANS AND SERVICES

- Military construction, Army (MCA) and base closure projects list for next 5-yr period
- Project map (OMA Funds) for current/next FYs with location, cost, and estimated start and completion dates
- Master plan maps (future development)

### ENGINEER RESOURCE MANAGEMENT

- Current FY budget by account (J,K,L,M, and H)
- Annual work plan
- Obligation plan

### ENERGY CONSERVATION

- Program information (to include minutes of last Energy Council Meeting, charts, award program, and MACOM goals)

### ENVIRONMENT

- Copy of most recent 1383 report
- Status of notices of violation (NOVs)
- Status of Underground Storage Program
- Status of Asbestos Program (has survey been completed?)



**RESOURCES  
AND  
WORK MANAGEMENT**



## **SUBJECT: Program Objective Memorandum (POM)**

### **POLICY:**

- AR 1-1, Planning, Programming, Budgeting, and Execution System, 25 May 90 (working draft)
- AR 11-32, The Army Long-Range Planning System, 10 Jan 89

### **GUIDANCE:**

The POM presents the Army's proposal for a balanced allocation of its resources within specified constraints. It represents MACOM-originated requirements for manpower, operation and maintenance, and housing and construction. The Secretary of the Army (SA) consolidates, reviews, and approves MACOM requirements. Once approved, the Army POM is sent to the Office of the Secretary of Defense (OSD) for review. OSD issues a Program Decision Memorandum (PDM), which reflects the program decisions made by the Secretary of Defense (SECDEF). Army budget estimates are prepared on the basis of SECDEF-approved program decisions.

The following documents are available to MACOMs to assist in developing POMs.

- **Program guidance memorandums.** The Army issues two program guidance memorandums over an 18-month period. These include the Army Preliminary Program Guidance Memorandum, and the Army Program Guidance Memorandum, which provides updated information for MACOMs to use in developing their POM submissions.
- **Program administrative instructions.** Program development instructions provide administrative instructions to help MACOMs prepare their program submissions and submit CINC high-priority warfighting needs.
- **Program and budget guidance.** The program and budget guidance document provides MACOMs with resource assistance. The guidance covers manpower, operation and maintenance, and construction and housing.

### **CRITICAL ISSUES:**

How can the DEH better support the POM process? One critical element in identifying required resources is to develop an up-to-date, comprehensive installation master plan. A facilities revitalization plan should also be integrated into the master plan to ensure that major maintenance, repair, and construction projects are planned for the POM years. This document should be detailed enough to accurately identify any future facilities requirements that may be reflected in the MACOM's POM submission.

### **TIPS:**

- Be sure that the master plan accurately reflects future requirements.
- Become familiar with any guidance and instructions that DA may provide to help in preparing the POM submission.
- Talk to the resource manager at every level to ensure that all required information is available to keep facilities issues as one of the commander's priorities.
- Be sure your requirements are accurately documented on the automated MACOM POM submission.
- Keep abreast of DA force structure initiatives, such as Defense Management Review and Army Management Review, VANGUARD, and Army 2000.

PROJ INENT OFFICE: DAEN-ZCR, Office of the Assistant Chief of Engineers

POC: MACOM Engineer Resource Management Office

POC NAME: John Armistead

POC TELEPHONE #: MIL AV 224-3084

## **SUBJECT: Unconstrained Requirements Report**

POLICY: AR 420-16, Facilities Engineering Reports, 30 Sep 87

### **GUIDANCE:**

The unconstrained requirements report (URR) is developed annually by each Army installation and covers at least 5 fiscal years, beginning with the Army budget year plus four. The URR is prepared for each Army appropriation that provides real property maintenance activities (RPMA) resources. The URR identifies the resources the DEH needs to operate and maintain the installation during the fiscal year for which the report is being prepared. The URR is the basis for data used to compile the annual recurring requirement (ARR), which includes "one-time requirements" and is the basis for distributing RPMA resources.

### **CRITICAL ISSUES:**

The URR is the most important RPMA document in the program and budget process. It determines what is needed to operate and maintain the Army's real property worldwide and is the basis for resource determination and distribution to the MACOMs. The ARR extracted from the URR is the key element used in resource distribution. Therefore, the URR must be accurate and reasonably developed.

#### TIPS:

- Keep in mind that the URR will have a definite impact on the amount of resources allocated for your installation.
- The URR can be developed only by the DEH—not by the comptroller.
- When preparing the URR, get the assistance of the utilities and building and grounds staff.
- Be sure the Commander and DEH are involved.
- Remember that the report is unconstrained. Therefore, it cannot be limited to the resources expected but must reflect the actual needs of the installation DEH.
- Be certain that the URR for each fiscal year is thorough—not simply an inflation of last year's input.
- Compare and analyze requirements against actual expenditures and the impact on the installation and community; that is, compare requirements reported in the URR against costs reported via the Tech Data Feeder Report or Redbook.
- Remember that the URR is used to respond to various requests for information on RPMA requirements.

PROPOSER OFFICE: DAEN-ZCP-B Office of the Assistant Chief of Engineers.

POC TELEPHONE #: CIV (202) 694-3084, MIL AV 224-3084.

### **SUBJECT: Backlog of Maintenance and Repair (BMAR)**

#### POLICY:

- AR 420-16, Facilities Engineering Reports, 30 Sep 87
- Tech Note 420-10-01, Facilities Engineering Resources Management System Handbook, 31 Mar 90
- Congressional direction (projects more than 4 years old must be dropped)

#### GUIDANCE:

The BMAR comprises those maintenance and repair projects that were scheduled to be started (funds obligated) during the fiscal year but remained unfinanced at the end of it.

#### CRITICAL ISSUES:

An unfinanced maintenance and repair project can be recorded as BMAR only if it meets the following conditions:

- It was included in the annual work plan (AWP).
- It remains unfinanced on 30 Sep.
- The project is less than 4 years old.

#### TIPS:

- Record in the project folder all repair work that must be completed. If necessary, use an additional sheet of paper to identify the need, the factors used to determine the current working estimate, the date, and the contact person's name. Put it in the AWP if it must be accomplished that fiscal year.
- If project cannot be done in its entirety, then phase the project over time. Put the first phase in the AWP; if it remains unfunded at end of the fiscal year, record it as BMAR. Subsequent phases should be recorded as unfinanced.
- See the Lessons Learned section, Subject: Backlog of Maintenance and Repair.

PROPOSER OFFICE: DAEN-ZCP-B Office of the Assistant Chief of Engineers.

POC TELEPHONE #: CIV (202) 694-3084, MIL AV 224-3084

### **SUBJECT: Facilities Revitalization Strategy**

#### POLICY:

- The Army Plan, Feb 90
- Army 92-97 POM Vol VI, Facilities Construction and Maintenance, 30 Apr 90

#### GUIDANCE:

What is the Army's facilities revitalization strategy?

The Army leadership supports the following strategy. First, maintain what the Army owns at a level that best supports readiness, protects the environment, and sustains and preserves Army real property. As we begin to consistently fund the cost of the annual recurring requirement (ARR), we can begin to contain the growth in backlog maintenance and repair. Second, revitalize aging Army facilities infrastructure by focusing and leveraging available resources including the military construction accounts, maintenance and repair funding, commercially financed facilities program, Army Communities of Excellence (ACOE) Program (expanded self-help), and engineer troop construction. As a prudent revitalization rate is approached, reduce the maintenance and repair backlogs to manageable levels.

How can the DEH help support this strategy?

The logical first step is to fund the ARR. If you cannot afford ARR, you should consolidate into your best facilities and tear down unneeded ones. Strengthen master planning and land use management, and be sure to incorporate environmental considerations into the decisionmaking process.



Complement ARR funding by focusing military construction on the most urgently needed revitalization of your current mission facilities.

#### CRITICAL ISSUES:

Development of the installation master plan and the DEH's Annual Work Plan (AWP) are critical because they are the foundation upon which the MACOMs, and ultimately the Army, build the necessary resources for revitalization.

#### TIPS:

- Be sure the master plan accurately reflects future requirements.
- Include a facilities revitalization plan as you develop your AWP, and integrate the revitalization plan into the master plan and AWP.
- Help the commander formulate an effective facilities discipline strategy.

PROPOSER OFFICE: Office of the Assistant Chief of Engineers, Resources Division, DAEN-ZCR-F

POC NAME: John Armistead

POC TELEPHONE #: CIV (703) 614-3936, MIL AV 224-3936

### SUBJECT: Annual Work Plan (AWP)

POLICY: Tech Note 420-10-01, Facilities Engineering Resources Management System Handbook, 31 Mar 90

#### GUIDANCE:

The AWP is part of the DEH Resources Management Plan and guides the DEH by outlining the work that is planned for completion during the fiscal year.

#### CRITICAL ISSUES:

The starting point for the AWP is the unconstrained requirements report (URR), which lists the dollar amounts for all work that the DEH must complete in support of the real property maintenance activities (RPMA) mission, without regard to resource constraints. The AWP is a planning document that reflects the best information available to the DEH concerning known project requirements for the coming fiscal year. At a minimum, the AWP should address the following points:

- Work to be performed by installation forces, through a commercial activity (CA) contract, or through other contracts.
- Equipment requirements.
- Family housing maintenance and repair requirements.
- Engineer troop work.

- Funding summaries by J, K, L, and M accounts.
- Operations and Maintenance, Army (OMA), Operations and Maintenance, Army Reserve (OMAR), Army Industrial Fund (AIF), and other items included under budget activities as applicable.

#### TIPS:

- Account for all work that must be accomplished during that fiscal year.
- Have the installation Commander use the AWP as a managerial working document; it can be updated during the fiscal year to reflect any deviations from the original plan that would affect the DEH mission.
- Use the AWP to support backlog of maintenance and repair (BMAR).
- Include all financed and unfinanced (prioritized) requirements.

PROPOSER OFFICE: DAEN-ZCP-B Office of the Assistant Chief of Engineers.

POC TELEPHONE #: CIV (202) 694-3084, MIL AV 224-3084

### SUBJECT: Job Order Contracting (JOC)

#### POLICY:

- Memorandum, ASA(DR&A) and ASA(I&L), 31 May 88, Subject: Job Order Contracting (JOC) Implementation
- Technical Note 420-10-03, USAEHSC, 30 Apr 90, JOC Planning and Execution Guide

#### GUIDANCE:

The JOC uses an indefinite delivery contract to reduce the total lead time for accomplishing small- and medium-sized real property repair and minor installation construction projects. Thus, the JOC avoids the traditional, separate and iterative design and specifications, and construction contracting actions. Prepriced units of work help streamline the construction contracting process. The contracts are awarded using competitive procedures (including awards under the 8(a) program as appropriate) and provide a continuing performance incentive because the JOC uses the indefinite quantity type of contract.

Proven benefits of JOC include increased responsiveness, flexibility, reduction in engineering design costs, and a potential net reduction in overall acquisition costs. However, a JOC will not replace installation planning and prioritizing by DEH personnel and commanders and may not be suitable in all cases.

Using a JOC to acquire real property repair and minor construction is optional, not mandatory. Installations should review their real property maintenance activities (RPMA) project contracting workload and budget plans and projections to (1) identify potential work that may be appropriate for JOC and (2) verify anticipated funds availability.

Commanders may use their directorates of contracting (DOC) to solicit, award, and administer the JOC. Commanders may also obtain these services on a reimbursable basis from the installation's direct support district of the U.S. Army Corps of Engineers. If the Corps district is used, the fee charged by the district to award the basic contract (and provide contract administration, if desired) will be reimbursable on an actual cost basis.

Effective use of the JOC requires that the DEH be assigned significant responsibility and authority for planning, work and budget projections, identification and prioritization of individual job order requirements, order proposal evaluation, and contract administration (ordering officer authority, monitoring of contractor performance, and acceptance of work products). Coordination and cooperation among DEH, Corps of Engineers districts, and installation DCCs are essential to the successful implementation of JOC.

The JOC is a supplemental construction contracting tool; as such, other existing or planned contracts at the installation must be considered when establishing and executing a JOC. The scope of any existing or planned base operations contracts for facilities engineering support services must be analyzed, and care must be taken to avoid a conflict between the scope of these contracts and the JOC. Facilities engineering support services, such as utility plant operation, custodial, grounds maintenance, and refuse collection and disposal, shall not be acquired through JOCs.

Small business and small disadvantaged business programs must be considered in planning and executing JOCs. Projects that are considered appropriate for the 8(a) program (in accordance with FAR and DFARS Subpart 19.8) will continue to be accomplished through it.

#### CRITICAL ISSUES:

- Independent government estimates for JOC delivery orders must contain adequate detailed information to be compared with the contractor's proposal.
- Unit price books must be reviewed and amended, as appropriate, before the job order contract is solicited.
- Non-prepriced items in delivery orders must be strictly controlled. A review must verify the need for the items and the accuracy of the proposed quantities and determine that the direct costs are reasonable.
- Commanders may also request contracting support from USACE. However, MACOM policies may require that contracts awarded by a Corps district be

administered, on a successor contracting officer basis, by the installation DOC. The DOC is primarily responsible for contract support of all installation activities.

#### TIPS:

##### Things To Do

- Become thoroughly familiar with contracting and JOC. Some potential sources of information include FAR, AFARS, other JOC users, EHSC, PROSPECT, and contracting officers (COs).
- Plan properly and thoroughly. Your JOC future will be determined by past planning effort. Involve everyone who has a vested interest in JOC.
- Document everything. Develop and use orderly files and procedures, and document all work requirements, contract requirements, and procedures.
- Read, understand, and follow the contract. Remember that both the government and the contractor are committed by it.
- Keep your options open. JOC delivery orders are not mandatory. Requirements contracts, commercial activities (CA) contracts, individual project contracts, and in-house and troop work force remain as options.
- As a last resort, don't do the job at all, or postpone it until later.

##### Things Not To Do

- Do not run JOC without adequate resources, including people. You must have the money in hand. Good management takes good people. Avoid the "other duties as assigned" approach to JOC staffing.
- Do not run up the non-prepriced item percentage. You need to clearly control non-prepriced items and value. Stick to established limits. Do not use government-furnished equipment or materials.
- Don't use untrained, inexperienced people for contract administration.
- Don't violate the contracting officer's trust. JOC is a contracting tool, and joint effort works best.
- Don't give more work if you don't get satisfactory work. This is simply a smart business practice. Use incentives, not threats.
- See the Lessons Learned section, Subject: Contract Execution and Administration.

POC: George Cromwell

PROPOSER OFFICE: Installation Services Branch,  
RPMA Management Division, Directorate of Facilities  
Engineering.

POC TELEPHONE #: CIV (703) 664-6466, MIL AV 354-6466

## **SUBJECT: Commercial Activities CA), OMB A-76**

**POLICY:** OMB Circular A-76 and Supplement, Aug 83  
R 5-20, Commercial Activities Program, Oct 86

### **GUIDANCE:**

The CA Program is based on long-standing policy that the government will rely on the private sector for goods and services when it is proper and economical to do so. CAs are those functions that provide products or services which are obtained from private sources. CAs are distinguished from governmental functions, in that the latter are so intimately related to the public interest as to mandate performance by government employees. Governmental functions include Army management and direction, as well as those activities performed exclusively by military personnel subject to deployment. Cost comparison studies or CAs are conducted to establish the relative cost of in-house and contract performance of required work.

A performance work statement (PWS) is prepared, documenting the contract work that must be accomplished. The PWS describes the tasks, time constraints, and acceptable quality levels. The PWS does not specify how to perform these tasks, only the work that must be accomplished by the function under study, and it must describe the work accurately and in detail.

A management study should be performed to analyze the existing organization and operation and to determine the most economical and efficient way to accomplish the necessary work in-house. The management study develops an organizational structure for accomplishing the work, known as the most efficient organization (MEO). The MEO is used in the cost comparison as the basis for the government cost of operation.

Concurrently with the development of the PWS and MEO, a quality assurance surveillance plan (QASP) is developed. The QASP outlines how the government will inspect, observe, test, document, sample, and evaluate contractor performance. The QASP develops and implements procedures to ensure that the government is getting the contracted services or goods.

On the basis of the MEO and the PWS, the government prepares its in-house bid, and solicits bids from private industry. The solicitation includes the PWS, which provides a common standard for comparing government and contract costs. After selecting the contractor with the most advantageous bid, the cost of contracting is compared with the cost of in-house operation. To be selected as more cost effective, contractor costs must be at least 10 percent less than the in-house cost. This cost differential accounts for the intangible costs of transition to contract operations and the temporary decrease in productivity during the competition.

Upon completion, the results of the cost competition are announced. If the in-house operation is determined to be more cost effective, the solicitation is canceled. If the cost comparison results in a decision to convert to contract, the activities begin the transition to commercial operation.

### **CRITICAL ISSUES:**

Whatever the outcome of the CA review, the DEH will continue to be responsible for the same areas and activities for which it was responsible when the study commenced. All study team members must realize that future operations, whether accomplished by contract or in-house work force, must be addressed properly. Meeting this goal requires complete cooperation and maximum contribution from each team member. Such commitment will ensure that the functional needs of the DEH are heeded, that contractual requirements are met, and that the proposed MEO can continue operations while allowing the in-house work force to be competitive.

When developing the MEO, a cost reduction of between 25 and 30 percent is required to be truly competitive with the private sector. The PWS must be clear, complete, and definite in expressing the minimum needs of the government. Inaccuracies and ambiguities cause the greatest number of disagreements between the government and the contractor. A comprehensive QASP is needed to evaluate contractor performance. QASPs assist managers by establishing controls that reduce the potential for loss, waste, or mismanagement of government resources.

### **TIPS:**

- Develop a comprehensive PWS. A well-written PWS that clearly defines the type and amount of work to be performed will help minimize the cost of contract operations.
- Staff your study team with experts. A well-staffed team is essential to developing a competitive MEO.
- Use innovative techniques. A seemingly unorthodox approach may be just what is needed to solve a difficult managerial problem.
- Design multiskilled positions, such as combining the separate duties of carpenters, painters, plumbers, and electricians into a maintenance mechanic position. This approach gives management added flexibility in scheduling work and managing operations.
- Develop a method for collecting and presenting workload data for the PWS, including a method for retrieving workload data from automated engineer systems (Integrated Facilities System).
- Save time and resources by reviewing CA studies performed by similar organizations.
- Select and train Source Selection Evaluation Board (SSEB) members early. It is important that the SSEB evaluate contractor bids in a timely and effective manner.
- Develop a detailed transition plan when converting to an MEO or contract and hold weekly in-progress reviews to monitor transition status.

- To ensure a smooth transition from an in-house to a contract operation, make sure key contractor personnel are hired and are on site early enough to avoid delays in operation.

PROPOSER OFFICE: U.S. Army Commercial Activities Management Agency

POC TELEPHONE #: CIV (703) 355-0039, MIL AV 345-0039

## **SUBJECT: Contract Administration**

### **POLICY:**

- FAR Part 42, Contract Administration, 20 Jan 86
- OMB Circular A-76 and Supplement, Aug 83
- DA PAM 715-15, Service Contract Administration, 18 Mar 86
- AR 5-20, Commercial Activities Program, 20 Oct 86

### **GUIDANCE:**

Contract administration is the effective management of a contract to ensure that the government receives the contracted supplies and services and that all terms and provisions of the contract are honored. The Directorate of Contracting (DOC) has overall responsibility for contract administration, but DEH functional managers have major roles in the total effort of contract administration. Workload data; effective quality assurance and quality control plans; sufficient trained staff to monitor the contract; and a contract administration plan that is coordinated among contractor personnel, DEH, DOC, resource management, and other installation personnel are critical to good contract administration.

### **CRITICAL ISSUES:**

Effective contract administration requires the following:

- An identified requirement or workload.
- Selection of the proper contract type.
- A well-developed and executed contract administration plan, quality assurance surveillance plan (QASP), and contractor's quality control plan (enforced as a part of the contract requirements).
- DEH personnel trained in contract administration.

### **TIPS:**

- Have a well-prepared contract administration plan and QASP, both are essential to getting the staff required to administer the contract effectively.
- Have an accurate, complete workload projection. This is required prior to obtaining a fixed-price type contract in which fixed unit or task pricing is not practical.

- See the Lessons Learned section, Subjects:  
Contractor's Quality Control  
Cost Type Contracting  
Government's Workload Data Requirements  
Contract Modifications  
Contract Administration Plan  
Government Estimates  
Contract Administration  
Management of Interior Repair and Painting  
Service Contract Requirements  
Quality Assurance  
Contract Inspection Procedures  
Contractor Performance and Payments

PROPOSER OFFICE: Installation Services Branch, RPMA Management Division, Directorate of Facilities Engineering

POC NAME: John Lynn and Bob Hohenberg

POC TELEPHONE #: CIV (703) 664-6466, MIL AV 354-6466

## **SUBJECT: Technical Data Report (TDR) and Facilities Engineering and Housing Annual Summary of Operations (Redbook)**

POLICY: AR 420-16, Facilities Engineering Reports, 30 Sep 87

### **GUIDANCE:**

The annual TDR identifies the prior year operating costs and performance data for all real property maintenance activities (RPMA) work performed at Army installations and communities, regardless of source of funds. The information reported in the TDR is used to evaluate DEH performance; analyze RPMA Program management; conduct technical studies; and develop RPMA policies, standards, and programs.

The TDR represents a fiscal year-end overview of installation DEH operation, as characterized by the following reported information.

**Cost and performance factors for each major RPMA functional area**—operation of utilities (J account), maintenance and repair of real property (K account), alteration and minor construction (L account), and other engineering support (M account). The cost and performance data are reported by technical data activity code (TDAC), which depicts the HQDA and MACOM level of RPMA information requirements and shows a relationship with the Army management structure codes (AMSC) mandated by AR 37-100-XX.



**Obligations summary for the four major RPMA functional areas.** The annual obligations are further distinguished by (1) source of funds, such as Operations and Maintenance, Army (OMA); Operations and Maintenance, Army Reserves (OMAR); Army Family Housing (AFH); Research, Development, Testing, and Evaluation (RDTE); Army Industrial Fund (AIF), and (2) types of financing (direct and reimbursable).

**Unfinanced workload for the total unfunded backlog of maintenance and repair (BMAR) work (K account only).** The total unfinanced workload includes the annual BMAR, deferred maintenance and repair (DMAR) for family housing, and other unfinanced maintenance and repair requirements (non-BMAR or DMAR). BMAR is the end-of-fiscal-year measurement of maintenance and repair work remaining to be done on real property (not equipment) as a result of lack of resources. DMAR follows the same definition as BMAR, except DMAR applies only to family housing maintenance and repair. Other unfinanced requirements are maintenance and repair projects identified with a project number and current working estimate and that have never been scheduled on the installation's annual work plan (AWP). The unfinanced workload is further divided into sources of funds, types of financing, fiscal year origin, and TDAC (K account only).

**Population served.** The population served represents the average number of military and civilian personnel supported by installation RPMA who live either on or off the Army installation, community, or activity.

**Work Force.** Work force identifies the average daily strength of military and civilian personnel that perform RPMA work. The installation work force is further distinguished by officers; enlisted; U.S. civilians; other civilians; and authorized, recognized, and end strengths.

**Mobile Equipment.** Mobile equipment identifies the acquisition value and numbers of DEH equipment having an acquisition cost of \$5,000 or more (less riding lawn mowers). Reported information includes a break out of equipment available at the end of the fiscal year, acquired during the fiscal year, and disposed of during the fiscal year, and equipment that qualifies for replacement.

#### CRITICAL ISSUES:

The TDR is a highly visible document that is used extensively as the basis for many critical RPMA-related decisions. Accurate and meaningful data result in wise decisions and quality Army facilities.

#### TDR Use

The TDR is the only source of recurring RPMA information for all levels of the Army, from the information source (installations), through MACOMs, to HQDA. The

information is multifaceted in its use, as demonstrated by the following examples:

- Serves as the basis for many HQDA policy decisions such as the base realignment and closure (BRAC I and II) and defense management review.
- Indicates and measures whether RPMA costs correspond to required operating and maintenance costs.
- Provides a basis for evaluating whether RPMA Program objectives are being accomplished and whether surface management actions can be used to improve workload performance.
- Compares short- and long-range RPMA workload trends over a specified time.
- Highlights outstanding variations in RPMA information from one year to the next or between comparable installations.
- Provides a basis for comparing in-house work effort with the equivalent contracted functions.
- Identifies fixed facility maintenance and repair costs on a square foot basis and provides data for comparing unit cost factors against those of other government agencies and the public and private sector.
- Supports functional studies of low workload productivity and high cost areas.
- Responds to RPMA-related queries from Congress, DOD, Secretary of the Army, Army staff, and other organizations.
- Non-DOD agencies use portions of the TDR. The Department of Commerce uses the TDR to evaluate the Gross National Product, the Department of Labor uses the contractual data, and the Department of Energy uses electrical and fuel consumption data. Congress receives copies of Volume III of the Redbook.

#### Automated TDR System

Installation DEH personnel use the Integrated Facilities System (IFS) TDR microcomputer system to record annual RPMA technical data. Upon completion, DEH personnel forward the TDR (via floppy disk) to their respective MACOMs. The MACOMs review and send approved installation reports (again on floppy disk) to HQDA. The EHSC Systems Directorate loads all installation and MACOM TDR data into the Headquarters IFS (HQIFS) (HQIFS is available on the PAX Timeshare System), which can be accessed by HQDA and MACOMs. The HQIFS TDR system currently has 5 fiscal years of technical data available (FY85 to FY89). EHSC is currently conducting a comprehensive Army-wide review of the TDR reporting requirement and, upon completion of the review effort, the results will comprise and engineer change proposal (ECP) to IFS-M. This review will ensure that only minimum essential HQDA and MACOM management information is available.

## Facilities Engineering and Housing Annual Summary of Operations (Redbook):

One of the byproducts of the HQIFS TDR data base is the annual Redbook publication. The Redbook is a three-volume report distributed to more than 400 recipients throughout the Army and DOD. Volume I, Executive Summary, highlights the reported RPMA trends and information. Volume II summarizes the cost, performance, and backlog data consolidated by MACOM and the Army. Volume III includes the Army-wide and MACOM consolidations, as well as installation-level reports. (Note: Volume III is classified "For Official Use Only" because it includes proprietary installation-level RPMA information.)

### TIPS:

#### TDR Reporting

- **Costs.** When reporting costs by TDAC and source of funds (OMA, OMAR, RDTE, and AFH), include all costs—whether direct or reimbursable—under the respective fund source. For example, all direct and reimbursable (that is, reimbursed to OMA) costs from the AFH appropriation are reported as an AFH source of funds.
- **Performance factors.** Always ensure that the correct value for the appropriate unit of measure is reported. The value reported for total gross building square footage (K20000 and respective building category TDACs) should equal the value reported in the real property inventory (HQIFS-RPI).
- **Obligations.** Report all obligations to the nearest whole dollar. Obligations must be reported by source of funds and whether the funds are direct or reimbursable.
- **Unfinanced workload.** Remember that unfinanced workload applies only to maintenance and repair backlog projects (K Account) and does not include other RPMA accounts (J, L, and M) or MCA (military construction, Army) projects.

#### Quality control

- Be sure the TDR information submitted has been thoroughly reviewed for obvious inaccuracies.
- Compare the previously developed requirements reflected in the unconstrained requirements report (URR) with the actual execution, as reported in the TDR, and analyze the impact on the installation's infrastructure.

## HQIFS and Redbook

- For policy and functional questions pertaining to TDR, HQIFS and other RPMA reporting requirements, access to the HQIFS TDR data base, or copies of the Redbook, contact CEHSC-FM-R, CIV (703) 355-2395, AV 345-2395, FAX 780-5935, PAXID EHSCFEM.

### Technical assistance

- For technical questions and assistance in operating HQIFS and the PC TDR system, contact CEHSC-SS-S, CIV (703) 355-3463, AV 345-3463, FAX 355-3926, PAXID EHSCSS.

PROPONENT OFFICE: RPMA Management Division, Review and Analysis Branch (CEHSC-FM-R).

POC NAME: John A. Scharl

POC TELEPHONE #: CIV (703) 355-2395, MIL AV 345-2395

## SUBJECT: Review and Analysis Programs (R&A)

### POLICY:

TN 420-10-01, DEH Resources Management System Handbook (Formerly DA Pamphlet 420-6), Chapter 5, 31 Mar 90

### GUIDANCE:

A formal R&A Program provides the DEH with a basis for management by exception to identify existing and potential problem areas, develop alternative solutions, and take corrective actions. R&A allows the DEH to measure the efficiency of organization operations and evaluate the quality of performance. R&A serves as a two-way feedback process for the DEH by providing feedback to the DEH staff and reporting the current status and requirements to the installation Commander. R&A functions as a common baseline for communicating the progress achieved in meeting the installation's major programs and objectives. Without a strong commitment to an R&A program, the DEH does not know what the major program objectives are or whether they are being met.

### Fundamentals for an Effective R&A Program

- **Leadership Commitment.** The key to a successful R&A Program is a totally committed DEH, who encourages the program by embedding it in the directorate's management philosophy and actively providing a strong lead in its application.

- **Team Effort.** The program must receive complete support from every member of the DEH organization and be fully integrated into the work management system.
- **Plans and Objectives.** The program's major objectives must be clearly defined in the Resource Management Plan (RMP). The RMP should contain realistic milestones and consistent corporate strategy to achieve commonly set objectives.
- **Resource Allocation.** The results identified by the program serve as the basis for an effective distribution of DEH resources to support the installation programs and objectives.
- **Feedback.** An accurate and timely information-sharing process must be established to ensure that needed actions are performed as planned and that the plan is revised to reflect changes in installation programs and objectives.

#### R&A Organization

To establish a successful program, the DEH must create a corporate body with a charter to meet periodically, develop strategies, and provide a focus for the entire organization. To be effective, this group should be formalized and documented to ensure that the program is emphasized and acted on.

#### Suggested Areas for R&A

- **Personnel Management.** Review vacancies and status of personnel actions. Review approved overtime hours and expenses to ensure overtime is the most effective option. Analyze the frequency of awards given and disciplinary actions taken to measure the morale of the work force.
- **Environmental Management.** Review projects to ensure consideration of environmental requirements. Review installation's hazardous waste generation sites and amounts generated from each site to meet the DOD 50 percent reduction target. Review status of storage area inventory to meet the applicable federal, state, and host nation environmental laws.
- **Engineering Plans and Services.** Evaluate the number of change orders and associated costs to reduce costly planning and design deficiencies. Track planned projects to ensure the project scope continues to meet the installation's master plan. Review contract management and inspection performance.
- **Housing Management.** Track the number of available versus authorized Army family housing (AFH) units and troop billeting. Evaluate housing and billeting occupancy rates. Track the number of military members awaiting AFH.
- **Supply and Storage Management.** Evaluate the effectiveness of the material procurement process to reduce costs and time. Evaluate material storage options regarding shop and bench stock, and emergency storage in conjunction with the work flow process to ensure availability of supplies against high inventory costs.

#### Buildings and Grounds

- **General.** Evaluate the adequacy of tools, equipment, and vehicles. Evaluate revenue versus operating costs and benefits of the forestry, wildlife, and land management program. Evaluate workload percentage in applying various maintenance and repair options (breakdown, preventive, self-help, and planned major upgrades).
- **Utilities Management.** Evaluate utilities consumption for meeting energy conservation and budget requirements. Evaluate workload distribution for breakdown versus preventive maintenance work. Evaluate the cost of operating utilities plants, energy distribution systems, power, water, and wastewater plants.
- **Engineer Resource Management.** Analyze actual costs versus projected RPMA expenditures to ensure availability of adequate funding. Evaluate work approval rates, workload backlogs, and average work document turnaround. Conduct trend analysis regarding the percentage of DEH work force source (in-house, troop, contract, self-help) and corresponding performance.

#### R&A Techniques

- **Methods analysis (MA)** comprises all procedures pertaining to designing and improving operations and includes the use of studies and analyses of processes, methods, motions, materials, tools, and equipment to determine the best options. The MA approach consists of systematic procedures for gathering and analyzing data regarding all elements of the work to identify and develop improved methods of work accomplishment.
- **Process charts** can be used to illustrate events that occur during a series of actions or operations. Process charts record all aspects of a process to obtain a better understanding and improve current operations.
- **Work system studies** are systematic investigations of existing and planned work systems to formulate the most effective process and methods of program accomplishment. This technique applies to the design of any type of management, work system, or organization.
- **Sampling** is the statistical approach to estimating a population's characteristics by examining a portion of that population. Sampling is a valuable tool for gathering facts accurately, inexpensively, and quickly.
- **Work measurement** represents a number of techniques that can be used to measure and evaluate work activity. The primary purpose is to obtain reliable data regarding the time required to complete a work segment. Two work measurement techniques that particularly apply to RPMA analysis are work sampling and time and motion studies.
- **Trend analysis** is used to predict possible future scenarios by projecting historical data (fuel price changes, number of service calls based on facility age, and craft work trends based on completed work orders).



- **Economic analysis** (EA) is a systematic technique for measuring issues where cost is the major consideration. EA allows for comparing, contrasting, and evaluating the economic feasibility of two or more alternatives.

#### CRITICAL ISSUES:

An active R&A Program is imperative. To operate within a constrained budget, improved work methods must be developed at reduced resources while retaining quality and quantity of service. By tailoring an R&A Program to the specific size, mission, and priorities of each installation, the most effective RPMA operation and management can be achieved.

#### TIPS:

- Establish a formal R&A Program and encourage its use by actively providing the lead in its application.
- Incorporate the program into your organization's standard mode of operation.
- Ensure the active participation of each member of the organization.
- Based upon R&A, eliminate problem areas that affect program objectives.
- Provide accurate and timely feedback to all organizational levels.
- Ask yourself two questions: Is what I am doing necessary and contributing to the organization's programs and objectives? If so, am I using the best methods available?
- See the Lessons Learned section, Subjects: Overtime Controls and Work Management.

PROPONENT OFFICE: RPMA Management Division,  
Review and Analysis Branch (CEHSC-FM-R)

POC NAME: John A. Scharl

POC TELEPHONE #: CIV (703) 355-2395, MIL AV 345-2395

### **SUBJECT: Public Affairs**

POLICY: Consult Local Public Affairs Office

#### GUIDANCE:

Trust is the basic ingredient for a good working relationship with the installation public affairs office (PAO). The PAO is your Commander's link with the community, both on and off post. The PAO can help generate support for your program, enhance the Army's image, and help the installation present a unified image.

The first rule is to plan ahead. The PAO can inform the public about projects, programs, or problems that may affect such areas as installation traffic patterns, environmental issues, or facility use. A good public affairs officer can help the DEH work with local media to increase community cooperation during emergencies.

Work with the PAO to establish a public affairs plan and develop standing operating procedures for responses to media inquiries. Remember that you have a right to take time to consider answers to reporters' questions. When a reporter calls, always write the questions down. Contact your PAO for assistance in handling difficult questions or issues that have implications outside your organization. If your PAO calls you for support in handling a query, give it top priority.

Celebrate the Army's successes. Keep your PAO informed of good news—invite them to be there when a renovated building reopens, a construction project is completed, an energy program nets savings, or a wildlife survey gets underway.

Also, don't forget your Corps' PAO. The district, division, HQUSACE, and EHSC can all assist you in spreading the good word about DEH successes throughout the Corps.

#### CRITICAL ISSUES:

Installation management issues are high-visibility subjects. People's jobs, homes, and community interests are affected by everything you do. Special interest organizations scrutinize Army installations. Your PAO is the installation's vital link to the local community.

#### TIPS:

- Coordinate media inquiries with the PAO.
- Publicize good news—especially on environmental issues.
- Contact Corps PAOs to publicize district and installation projects.
- Contact EHSC PAO to publicize installation management issues.
- Incorporate regular contacts with the installation PAO into your schedule.
- Brainstorm responses to possible emergencies such as hazardous materials spills or industrial accidents.
- Don't hide when bad news strikes—Bad news never gets better with time. Work with the PAO to limit the damage as much as possible.

PROPONENT OFFICE: EHSC Public Affairs Office

POC TELEPHONE #: CIV (703) 355-3931, MIL AV 354-3931

## **SUBJECT: Integrated Facilities System-Mini/Micro (IFS-M) Planning**

### **POLICY:**

- AR 25-1, Army Information Resources Management Plan, Nov 88
- AR 25-3, Army Life Cycle Management of Information Systems, Nov 89

### **GUIDANCE:**

The IFS-M is the system of record for DEH work management requirements. All new automation requirements deemed necessary by a DEH must be compatible with IFS-M at the data element level and should be accomplished by, or coordinated through, the U.S. Army Engineering and Housing Support Center.

### **CRITICAL ISSUES:**

- IFS-M should become the DEH's central data base and be integrated into the installation, Military Communities Installation Support Model, and U.S. Army, Europe Community Automation System.
- DEH efforts to develop automated systems by contract or through Army labs should be coordinated with EHSC to ensure hardware and software compatibility.

### **TIPS:**

- Use the IFS-M to the maximum extent.
- Request improvements to IFS-M through the System Change Proposal process.
- Work closely with your local director of information management to plan new automation initiatives.
- If developing an automated system, consider the necessity for electronic interface with other DEH systems.
- Before development of an automated system, acquire all necessary approvals, as specified in AR 25-1, AR 25-3, and any locally mandated regulations.

PROPONENT OFFICE: Directorate of Systems Integration, CEHSC-SF

POC NAME: Ronald B. Niemi

POC TELEPHONE #: CIV (703) 355-3938, MIL AV 345-3938

## **SUBJECT: Integrated Facilities Management System-Mini/Micro (IFS-M) Implementation**

POLICY: TN 420-10-01, DEH Resources Management System Handbook (Formerly DA PAM 420-6), 31 March 90, IFS-M Pre-deployment Handbook, 9 Aug 89

### **GUIDANCE:**

Installation preparation for installing IFS-M at a DEH.

### **CRITICAL ISSUES:**

Successful implementation of IFS-M requires dedication and preparation on the part of the installation DEH. IFS-1 was a batch system run on a mainframe. IFS-M is an interactive real-time system run on a dedicated minicomputer, located in most DEH areas.

The DEH is responsible for having a computer room to house the Sperry 5000/95 computer. This room must meet equipment and Army security regulations. The configuration of the computer and its peripherals is developed by the installation and its MACOM with technical help from EHSC. Installation of the computer will be done by the vendor (UNISYS). Software installation will be done by EHSC personnel. The functional training will be done by an EHSC contractor on site. Overall direction of the deployment on site will be accomplished by an EHSC employee, the chief of deployment.

The designation of a project officer, systems administrator, and data base administrator must be done early to ensure that all the site requirements are met. These individuals are critical to the success of IFS-M.

Most of the data in the IFS-M system will be imported<sup>1</sup> from an existing system (IFS-1, IFDEP-E (in Europe), or the Army Materiel Command (AMC) real property data base at Rock Island). The accuracy of these data will greatly influence the quality of the data in IFS-M. Existing IFS-1 records must be purified and purged of obsolete and incorrect data.

### **TIPS:**

- Visit another site where IFS-M has already been installed and is operational.
- Be sure your MACOM recognizes your requirements for hardware and personnel.
- Look at the IFS-1 missing essential data listing in real property. This will indicate the completeness of the real property data. The cleaner your IFS-1 data are, the smoother the conversion will be. Uncompleted service orders more than 6 months old can usually be purged without problem. Job order requests (JOR) and individual job orders (IJO) more than 2 years old that have had no action other than a receipt can usually be returned to the originator for resubmission.

PROPONENT OFFICE: Facilities Engineering Systems Support Division, CEHSC-SF, Directorate of Systems Integration

POC NAME: Jack Malone

POC TELEPHONE #: CIV (804) 734-2011, MIL AV 687-2011

## **SUBJECT: Army Communities of Excellence (ACOE)**

### **POLICY:**

- DA PAM 600-45, Army Communities of Excellence, Oct 89
- TN 600-45-1, Facilities Action Plan, 31 Jul 90

### **GUIDANCE:**

The ACOE Program is in its second year. The Army Chief of Staff, GEN Carl E. Vuono, says, "Community excellence engenders pride, and pride is the fuel of human accomplishment." The process of creating excellent communities has been designed around three principles: set high standards, evaluate against those standards, and reward those who achieve. The ACOE Program focuses on service and facilities excellence.

MACOMs will evaluate and reward those who achieve excellence and circulate success stories to other installations. MACOM-level ACOE award winners are eligible to compete for Chief of Staff, Army (CSA) and CINC awards worth more than \$1 million.

### **CRITICAL ISSUES:**

The key components of customer service excellence are a customer-oriented strategy, prompt delivery systems, and courteous frontline people. ACOE guidelines were developed for each major function performed by a DEH and can be found in Appendix N of DA PAM 600-45. DEHs should use these guidelines to develop standards for their organization's unique functions.

Facilities excellence guidelines are included in the Installation Design Guide (IDG). The IDG establishes interior and exterior facilities standards and ensures consistency of the community's physical appearance and functionality. An installation's Facilities Excellence Program should include expanded self-help (ESH). ESH is an extension of the self-help program established in AR 420-22 and includes work beyond basic maintenance, such as repair and construction.

### **TIPS:**

- Use the Facilities Action Plan to update and enhance your ACOE implementation plans.
- Always have trained and highly motivated customer service representatives and ESH managers.
- Get additional tips from the CSA's ACOE office, which periodically publishes a "Sharing Good News" pamphlet containing excellent ideas.

**PROPONENT OFFICE:** Planning Division, EHSC

**POC NAME:** Johann Grieco

**POC TELEPHONE #:** CIV (703) 355-7753, MIL AV 345-7753

## **SUBJECT: \$500,000 Project Lists and Approvals**

### **POLICY:**

- Memo, OCE, DAEN-ZCP-B, 29 Nov 89, Subject: Maintenance and Repair Project Reporting to Congress, FY91 President's Budget
- AR 420-10, Management of Installation Directorates of Engineering & Housing, 2 Jul 87
- AR 415-35, Minor Construction, Emergency Construction, and Replacement of Facilities Damaged or Destroyed, 15 Sep 83
- DA PAM 420-8, Facilities Engineering Management Handbook, Change 1, 15 Mar 85, Chapter 9, "Project Definition and Work Classification for Repair, Maintenance, and Construction"

### **GUIDANCE:**

The above-referenced memo required MACOMs to report any major repair project and associated Operations and Maintenance, Army (OMA) construction that must be accomplished simultaneously, if the total funded cost exceeds \$500,000 for each budget submission beginning in FY91. This requirement was reiterated in instructions for the FY92-93 OMA budget estimate submission.

### **CRITICAL ISSUES:**

Army installations will continue to be required to identify maintenance, repair, and associated construction work where the total funded cost exceeds \$500,000 per undertaking.

### **TIPS:**

- Refer to AR 420-10, which defines maintenance and repair.
- Refer to AR 415-35, which defines construction.
- Refer to DA PAM 420-8, which provides examples of work classification and project scope.
- Do not use the terms "upgrade," "renovate," "rehabilitate," or "install" in your submissions when referring to maintenance or repair work.

### **PROPONENT OFFICE:**

Installation Programs and Policy (IPP) Group, Buildings and Pavements Division, Director Facilities, Engineering, EHSC.

**POC NAME:** Helmut Gramberg, c/IPP Gp. CEHSC-FB-I

**POC TELEPHONE #:** CIV (703) 355-2347/3580, MIL AV 345-2347/3580

**TECHNICAL  
OPERATIONS**





## **SUBJECT: Army Dam Safety Program**

### **POLICY:**

- Public Law 92-367, National Dam Inspection Act of 1972
- Executive Order, 23 Apr 77, on dam safety

### **GUIDANCE:**

The program in Army dam safety is executed in accordance with the federal guidelines on dam safety. Engineering and Housing Support Center manages and oversees the Army dam safety program for dams on Army installations. The U.S. Army Corps of Engineers provides technical guidance and direct support to accomplish various tasks under the program. All federal agencies (including the Department of the Army) that own dams must meet the federal guidelines on dam safety. In 1988, EHSC began implementing the federal guidelines for Army dams, which involves implementing a program that systematically inventories, inspects, maintains, repairs, and documents all dam safety activities. A draft Army regulation is being prepared for the Army dam safety program.

### **CRITICAL ISSUES:**

#### **Maintaining an up-to-date national dam inventory.**

The Army dam inventory was completed in 1989 and was scheduled for distribution in October 1990.

**Inspecting high- and significant-hazard dams.** A preliminary safety inspection performed by the MACOMs and installations is scheduled to be completed in FY91. Technical inspections of these dams by the Corps of Engineers (COE) is scheduled to begin in FY91.

**Training DEH and MACOM dam safety personnel.** EHSC has sponsored two dam safety training sessions. MACOMs and installations with dams attended these sessions, as well as Corps direct support districts and divisions. These workshops provided an overview of the EHSC dam safety program, and MACOM and installation dam safety responsibilities. MACOM and installation personnel are also encouraged to attend PROSPECT courses. Beginning in FY91, annual training should be undertaken for all DEH staff responsible for the program.

**Tracking maintenance and repair accomplishments.** Federal guidelines mandate documentation of major maintenance and repair accomplishments. Beginning in FY91, maintenance and repair will be documented through the MACOMs to EHSC.

**Emergency action plans.** EHSC has funded the COE to determine the status of the hazard designation for all Army dams. From this, dams that require emergency action plans and flood emergency plans will be identified in FY91.

### **TIPS:**

- Contact MACOMs and installations programs for dam safety evaluations and emergency action plans through direct support districts.

**PROPONENT OFFICE:** CEHSC-FB-P

**POC NAME:** Robert W. Williams

**POC TELEPHONE #:** CIV (703) 355-3582

## **SUBJECT: Airfield Evaluation Program**

**POLICY:** AR 420-72, Surfaced Areas, Bridges, Railroad Track and Associated Appurtenances, 24 Mar 76

### **GUIDANCE:**

The referenced AR sets policy and procedures for evaluating, maintaining, and repairing Army airfield pavements. The regulation specifies that airfield pavements must be maintained within the pavement condition index (PCI) range of 55 to 70 (good to very good condition). Airfield pavements should have a PCI survey and nondestructive testing (NDT) evaluations performed every 5 years (or with each mission change). Design plans and specifications must be performed in accordance with Corps of Engineers (COE) guide specifications and manuals (state highway specifications prohibited).

### **CRITICAL ISSUES:**

**Coordination and oversight of airfields.** Overall proponenty for Army airfields is within the Aviation Systems Command (AVSCOM); several airfield appurtenances require engineering expertise outside of the aviators' areas of expertise (such as pavement conditions, airfield lighting, and mooring techniques).

**Certification of Army airfields.** AVSCOM requires Army airfields to be certified to meet Army and Federal Aviation Administration operational and safety requirements.

**Funding for evaluations of Army airfields.** Since 1982, DAEN-ZCP and now CEHSC-FB-P have received funding for airfield evaluations. Beginning in FY91, this program will be executed on a reimbursable basis (local funding).

**Ability of Army airfields to meet current and future mission requirements.** The on-going (through this fiscal year) program of airfield evaluations accurately determines current airfield conditions and, through NDT evaluations, can predict future mission capabilities.

**TIPS:**

- Continue with current EHSC program policy of providing a maintenance and repair report to the DEH within 90 days of an evaluation.
- Contact MACOMs and installations programs for airfield evaluations and request services through EHSC (U.S. Army Engineering & Housing Support Center, ATTN: CEHSC-FB-P, Building 358, Ft. Belvoir, VA 22060).

**PROPONENT OFFICE:** CEHSC-FB-P

**POC NAME:** Robert W. Williams

**POC TELEPHONE #:** CIV (703) 355-3582

**SUBJECT: Work Classification**

**POLICY:**

- AR 420-10, Management of Installation Directorates of Engineering & Housing, 2 Jul 87
- AR 415-35, Minor Construction, Emergency Construction, and Replacement of Facilities Damaged or Destroyed, 15 Sep 83
- DA PAM 420-8, Facilities Engineering Management Handbook, Change 1, 15 Mar 85, Chapter 9, "Project Definition and Work classification for Repair, Maintenance, and Construction"

**GUIDANCE:**

AR 420-10 defines maintenance and repair and provides maintenance and repair project limitations.

AR 415-35 defines construction and construction projects.

DA PAM 420-8 provides examples of work classification and project scope.

**CRITICAL ISSUES:**

- Project work must be properly classified as maintenance and repair, or construction.
- U.S. law limits an Operations and Maintenance, Army (OMA) minor construction project to less than \$200,000.
- Construction projects cannot be phased or incremented to avoid the statutory construction limitation.
- Inspection and overhead costs for construction are a funded project cost and count against the \$200,000 project limitation. Design costs are unfunded, and do not count against the limit.

**TIPS:**

- Review definitions for maintenance and repair (AR 420-10), and construction and construction projects (AR 415-35). Review work classification examples in DA PAM 420-8.
- Document work classification rationale. AAA has discovered many instances in which the work classification rationale was not clearly documented, leading to allegations of statutory violations. Project files should always contain documentation to substantiate how project work was classified as maintenance, repair, or construction.
- See the Lessons Learned section, Subject: Work Classification.

**PROPONENT OFFICE:**

Installation programs and policy group, buildings and pavements division, Directorate of Facilities Engineering, EHSC.

**POC NAME:** Helmut Gramberg, c/IPP Gp. CEHSC-FB-I

**POC TELEPHONE #:** CIV (703) 355-2347/3580, MIL AV 345-2347/3580

### OMA PROJECT APPROVAL LIMITATIONS

| Category     | Installation      | MACOM         | OCE          | ASA          |
|--------------|-------------------|---------------|--------------|--------------|
| Maintenance  |                   |               |              |              |
| CONUS        | <=\$1,000,000 1,2 | <=\$2,000,000 | >\$2,000,000 | >\$3,000,000 |
| OCONUS       | <=\$500,000 1,2   | <=\$500,000   | >\$500,000   |              |
| Repair       |                   |               |              |              |
| CONUS        | <=\$1,000,000 1,2 | <=\$2,000,000 | >\$2,000,000 | >\$3,000,000 |
| OCONUS       | <=\$500,000 1,2   | <=\$500,000   | >\$500,000   |              |
| Construction |                   |               |              |              |
| CONUS        | <=\$200,000 1     | ***           |              |              |
| OCONUS       | <=\$200,000 1     | ***           |              |              |

\*\*\*Use of OMA funds for major construction in excess of \$200,000 per project is prohibited by statute.

- 1 In accordance with MACOM delegation.
- 2 A maintenance, repair, and construction project cannot exceed \$200,000 and 50 percent of the facility replacement value without prior Assistant Secretary of the Army (ASA) approval. Projects for World War II temporary structures where required work exceeds \$20 per square foot require prior ASA approval. Projects exceeding MACOM approval authority should be forwarded to EHSC, Attn: CEHSC-FB-1.

### **SUBJECT: Relocatable Building Program**

**POLICY:** HQDA Letter 420-89-1 dated 18 Dec 89, Subject, Policy Guidance on the Use of Relocatable Buildings

#### **GUIDANCE:**

The above-referenced letter sets policy and procedures for relocatable buildings acquired through governmental or commercial sources for temporary use as personal property, including their use, acquisition, temporary loan, transfer, stock levels, accountability, and disposition. Excluded are relocatable buildings authorized as real property (AR 415-15 and AR 415-35).

#### **CRITICAL ISSUES:**

- Contains relocatable building policy and definitions.
- Contains relocatable building approval limitations.
- Contains procedures to obtain relocatable buildings.
- Contains relocatable building disposition instructions.
- Contains submittal requirements and information on funding.

#### **TIPS:**

- Relocatable buildings obtained under the authority of referenced policy letter are for interim facility requirements (not to exceed 3 years).
- The utility support cost and site preparation are funded construction costs and are approved in accordance with AR 415-35.
- All submissions for approval must contain an economic analysis and space utilization statement.
- All relocatable building purchases must be approved by the Office of the Assistant Secretary of the Army (OASA) (IL&E).
- The lowest level of approval rests with the MACOM and that authority is limited to leases not exceeding 1 year and that are less than \$50,000 per year.
- Relocatable buildings should be approved by the installation planning board and should meet the requirements of the installation's design guide.

**PROPOSER OFFICE:** CEHSC-FB-1

**POC NAME:** Eric Loughner

**POC TELEPHONE #:** CTV (703) 355-3580, MIL AV 345-3580

## **SUBJECT: Engineered Management Systems (EMS)**

**POLICY:** AR 420-10, Management of Installation Directorates of Engineering and Housing, 2 Jul 87

### **GUIDANCE:**

As a basic consideration, maintenance and repair should be done at a level that is economically justifiable over the useful life of the facility and will prevent deterioration requiring major repair or replacement.

### **CRITICAL ISSUES:**

- RPMA funds will continue to be limited.
- The DEH community must do a better job of developing work plans, assessing the consequence of resource decisions on facilities condition, and defending DEH programs.
- Meaningful work planning and program development require facilities inspections and condition assessments.

### **TIPS:**

- Use the tools that EMS provides for facilities life-cycle management.
- Remember that there is technology to perform standardized inspection procedures, condition indexes, accurate prediction of future conditions, and maintenance and repair guidelines.
- Develop annual and long-range work plans from information contained in the preformatted parts, and assess the effect of funding decisions on facility condition.
- Implement the various systems available now, such as PAVER (pavements), ROOFER (flat, built-up roofs), RAILER (railroad tracking), PIPER (exterior pipes), and SCALER (interior building plumbing).

The Engineering and Housing Support Center provides product managers and contract support for implementation and reinspections. Write to EHSC, Attn: CEHSC-FB, Ft. Belvoir, VA22060-5516.

**PROPONENT OFFICE:** CEHSC-FB-P

**POC NAME:** Robert W. Williams

**POC TELEPHONE #:** CIV (703) 355-0040, MIL AV 345-0040

## **SUBJECT: Army Radon Reduction Program (ARRP)**

### **POLICY:**

- Toxic Substances Control Act, P.L. 100-551, Title III—Indoor Radon Abatement, Section 309, 28 Oct 88
- Army Radon Program, HQDA Letter 40-88-3, 21 Mar 88
- AR 200-1, Environmental Protection and Enhancement, Chapter 11: Army Radon Reduction Program (ARRP), 23 Apr 90
- The Department of the Army Radon Program, U.S. Army Environmental Hygiene Agency TG No. 164, Jun 89 (released 19 Sep 89)
- U.S. Army Engineering and Housing Support Center, Quality Assurance Plan (QAP) for the U.S. Army Radon Reduction Program (ARRP), 13 Dec 89

### **GUIDANCE:**

Because buildings are becoming more energy efficient, concerns about radon, a naturally occurring radioactive gas, have heightened. Sufficiently high levels of radon may be responsible for an increased risk of lung cancer. To ensure that Army personnel, Army families, and civilian employees are not being exposed to excessive levels of radon, the Army established the ARRP. The program is designed to identify structures having excessive levels of radon so that remedial action can be taken.

### **CRITICAL ISSUES:**

The ARRP requires testing of all buildings owned and leased by the Army. Remedial action must be taken if the indoor levels exceed an annual average of 4 picocuries per liter. All radon testing must be completed by FY91 and all abatement must be completed by FY97. Each installation must conduct its own radon tests using detectors and analytical services purchased through centrally awarded and managed contracts.

Radon testing is implemented on a priority system, from priority one to priority-three structures. Priority-one structures pose the highest risk of lung cancer and include living quarters, child-care centers, schools, and hospitals. Priority-two structures include training centers other than schools and buildings with a 24-hour operation cycle, and priority-three structures comprise all other buildings.

EHSC is the radon contract execution agent and the central point of contact for the ARRP. About 1 million detectors are estimated to be placed in about 350,000 Army buildings worldwide.

### **TIPS:**

- Remember that the centrally managed contracts are provided for the procurement of two types of detectors and associated laboratory analyses: alpha track monitors and charcoal canister monitors.

- Remember that a third contract provides quality assurance and data management services for the ARRP.
- Be aware that the Army has established an interagency agreement with the U.S. Environmental Protection Agency for the use of its radiation laboratories for quality assurance purposes.
- Obtain further guidance from the program management office.

PROPOSER OFFICE: CEHSC, ATTN: CEHSC-FU-S

POC NAME: Myrna Morales-Forrester or Mohinder K. Saini

POC TELEPHONE #: CIV (703) 355-2003, MIL AV 345-2003 or 345-3543

## **SUBJECT: Facilities Engineering (FE) Supply Operations**

POLICY: AR 420-17, FE Material and Equipment Management and Relocatable Buildings (effective May 91) and the Federal Acquisition Regulation (FAR)

### **GUIDANCE:**

With the major exception of Army Materiel Command, other MACOM installation DEHs operate their own supply operations. The guidance for doing this is contained in AR 420-17.

### **CRITICAL ISSUES:**

- Should installation supply operations be consolidated under the management of the Directorate of Logistics?
- Should supplies exceeding established stockage objectives continue to be held in stock or be returned?

### **TIPS:**

- Consider consolidation in the case of smaller installations only, generally no savings result from consolidation at medium and large installations.
- Be aware that most excess supplies are eventually consumed as intended. It is, therefore, a judgment call as to whether to hold onto or turn-in these items.
- See the Lessons Learned section, Subject: FE Supply Operations.

PROPOSER OFFICE: CEHSC-FB-I

POC NAME: Walter Seip

POC TELEPHONE #: CIV (703) 355-2347, MIL AV 345-3580

## **SUBJECT: DEH Equipment Replacement and Procurement Programs**

POLICY: AR 420-17, FE Material and Equipment Management and Relocatable Buildings (effective May 91)

### **GUIDANCE:**

The Army policy on acquisition of new or replacement equipment items is local purchase. No funding of central procurement has been provided through the POM years (thru FY93). Renting is a viable alternative, as is the leasing of vehicles from the General Services Administration (GSA).

### **CRITICAL ISSUES:**

- The installation must provide funding for equipment acquisition, with the exception of limited base-level commercial equipment (BCE) dollars.
- Alternatives to BCE funding and procurement must be considered.
- Usage does not justify retaining critically needed equipment items.

### **TIPS:**

- Justify projects in accordance with AR 5-4. Although Productivity Enhancing Capital Investment Program funds are available in limited quantities, DEH should program dollars for leasing and budget.
- Lease vehicles from GSA in close coordination with the supporting GSA regional office.
- Collect usage data so that cost effective decisions can be made regarding retention and replacement.
- See the Lessons Learned section, Subject: DEH Equipment Replacement and Procurement Programs.

PROPOSER OFFICE: CEHSC-FB-I

POC NAME: Walter Seip

POC TELEPHONE #: CIV (703) 355-2347, MIL AV 345-3580

## **SUBJECT: Boiler Water Program**

### **POLICY:**

- AR 420-49, 22 Jun 90, Paragraph 2-9 to 2-11
- TM 5-650, Oct 89, Chapter 4

### **GUIDANCE:**

The Engineering and Housing Support Center is responsible for periodic checks of boiler water treatment at



Army plants. AR 420-29 requires Army installations to send samples to EHSC for routine analysis. Results and recommendations are sent to the installation and major command. EHSC also provides courses and manuals for chemical treatment and testing, expert advice and quick response troubleshooting, chemical test kits and supplies, and condensate corrosion testers.

#### CRITICAL ISSUES:

- **Operation and maintenance costs.** The capacity of high- pressure boilers operated and maintained by the Army is more than 39 million BTU/HR. In 1989, operating costs were more than \$189 million (less fuel) and maintenance costs were more than \$23 million.
- **Safety.** Corrosion and scale can cause catastrophic boiler failure.
- **Energy savings.** Scale insulates heat transfer surfaces. A 1/62-inch-thick layer of scale reduces energy efficiency by 15 percent.
- **Boiler repair and replacement costs.** Routine acid cleaning for scale control decreases boiler life.
- **Condensate piping repair and replacement costs.** Corrosion of condensate return systems is the biggest corrosion problem associated with boilers.

#### TIPS:

- Evaluate boiler water treatment programs.
- Send boiler water, condensate water, and feed water samples to EHSC for analysis.
- Encourage staff to attend EHSC's boiler water treatment workshops.
- Use corrosion testers in condensate return systems.
- Buy treatment chemicals in generic form.
- Don't acid clean equipment for routine scale control.
- Don't rely solely on chemical vendors for technical assistance.

PROPOSER OFFICE: EHSC, ATTN: CEHSC-FU-W

POC NAME: Malcolm E. McLeod or Nelson Labbe

POC TELEPHONE #: CIV (703) 355-3151 or 355-3208,  
MIL AV 345-3151 or 345-3208

### **SUBJECT: Utilities Services Acquisition and Sale**

#### POLICY:

- Acquisition and Sale of Utilities Services: AR 420-41, 1 Oct 82
- Guidance for Calculation of Rates for the Sale of Utilities Services: Technical Note No. 420-41-1, 1 Oct 89

#### GUIDANCE:

Procedures and responsibilities for acquiring utilities services must follow procedures outlined in the Armed Services Procurement Regulation Supplement Number 5 (ASPRS No. 5). The Army-unique procedures and responsibilities are described in AR 420-41.

#### CRITICAL ISSUES:

The DEH will coordinate the acquisition of utilities services and provide technical support to the contracting officer. The DEH will also designate a professional engineer as the utilities sales and service officer.

#### TIPS:

The MACOM Commander provides operational oversight preparing and selecting technical rates, negotiating, and awarding contracts for the acquisition and sales of utility services through the Assistant Deputy Army Power Procurement Officer (ADAPPO) who is located in the office of the MACOM engineer.

PROPOSER OFFICE: EHSC, Army Power  
Procurement Office, ATTN: CEHSC-C

POC NAME: James M. Walton or Bill Jacob

POC TELEPHONE #: CIV (703) 355-7363 or 355-7365,  
MIL AV 354-7363 or 1345-7365

### **SUBJECT: U.S. Army Prime Power Program (P3)**

POLICY: Prime Power Program, AR 700-128 (Forth coming FY91)

#### GUIDANCE:

The Army P3 provides an inventory of prime utility power generation and distribution equipment to support military contingency plans. During peacetime, assets are available to support the high-priority electrical power requirements of the Army, the Department of Defense, and federal agencies. P3 consists of land-based 750 kW (60/50 Hz) generators to 4,500 kW (60/50 Hz) power plants and deployable distribution systems. Trained personnel in MOS 52E inspect, operate, maintain, and support P3 plants. These soldiers can support the DEH with MOS- related work. (For troop support, call Plans and Operations Division, AV 345-3988, COM (202) 355-3986.)

#### CRITICAL ISSUES:

- P3 generators 750 kW or larger at 4,160 volts.

- Initial cost for use of P3 equipment.
- P3 can support major exercises, insurgent contingencies, emergencies and disasters, infrastructure support, and backup power for anticipated outages.

#### TIPS:

- Refer to USAEHSC FAM 700-1, dated Feb 90.
- When requesting P3 equipment, you must know the following:  
kW rating desired  
Required voltage  
On-site transformer capability  
Voltage connector (DELTA-WYE)  
Available ground support equipment  
System frequency  
POL capability Transit handling capability
- See the Lessons Learned section, Subject: U.S. Army Prime Power Program (P3).

#### PROPONENT OFFICE:

Directorate of Prime Power and Emergency Operations (CEHSC), ATTN: CEHSC-M, Fort Belvoir, VA 22060-5516.

POC NAME: Michael A. Stollmeyer

POC TELEPHONE #: CIV (202) 355-3905, MIL AV 345-3905

### **SUBJECT: Power Reliability Enhancement Program**

#### POLICY:

- SECDEF Memos Nos. 61163 and 61164, 8 Dec 81
- AR 10-5, 1 Dec 80
- AR 25-1, 16 Nov 88
- DODI 4630.7
- DOD Directive S-5100-44

#### GUIDANCE:

The Secretary of Defense (SECDEF) has designated the Army as the DOD executive agent responsible for implementing the Power Reliability Enhancement Program (PREP) for critical command, control, communications and intelligence (C3I) facilities. This includes establishing overall design; operation and maintenance management criteria; survey, resurvey, and evaluation of utility systems supporting facilities; and systems performance for maintainability, survivability, and reliability. This program addresses facilities in the National Military Command System (NMCS) and includes high-altitude electromagnetic pulse (HEMP) and other protective systems. Program requirements are included in The Army Plan, Section VII.J.3.b and VII, K141h, and Appendix D; the Defense

Guidance for FY90-94, Sections I, II, and III. EHSC, CEHSC-K is responsible for overall program management.

#### CRITICAL ISSUES:

- Ensure adequate staffing of C3I facilities by trained operation and maintenance personnel.
- Sustain accurate utility system configuration control to maintain high reliability.

#### TIPS:

- Do not place rotating motor loads on uninterruptible power systems (UPS).
- When equipment is identified to require UPS power, provide backup cooling for critical mission equipment.
- When testing for site integrity, test total systems—not just pieces.

PROPONENT OFFICE: CEHSC, CEHSC-K

POC NAME: Peyton Hale

POC TELEPHONE #: CIV (703) 355-8067, MIL AV 345-8067

### **SUBJECT: Energy Source Selection**

#### POLICY:

AR 420-49 (22 Jun 90) Heating, Energy Selection and Fuel Storage

- Paragraph 3-4, Energy Source Analysis and Selection

#### GUIDANCE:

The primary fuel source for any new heating system constructed on lands under military jurisdiction must be the most cost effective over the expected life of the system.

AR 420-49, Chapter 3, Energy Utilization, provides guidance from the Department of Defense and current legislation.

DOD guidance, in detail, for energy source selection and application criteria has been distributed by the EHSC memorandum, CEHSC-FU, 10 Feb 89, Subject: Energy Selection for Army Facilities.

#### CRITICAL ISSUES:

- Military installation energy source selection is an item of congressional interest.
- Public law regarding energy source selection has been frequently revised.

- Energy costs vary unpredictably, such as the rapid changes experienced in the past (1973, 1976, 1979)
- Energy source selection economic analyses must carefully follow the referenced guidance from AR 420-49 and memorandum.

**TIPS:**

- When required to make an economic analysis, verify the guidance and legislation that are currently in effect.
- Remember that fuel oil costs for the installation are the Defense Logistics Agency (DLA) stock fund costs not the Defense Fuel Supply Center (DFSC) oil contract costs. The DFSC contract costs are subject to escalation and could change up or down weekly. Since 1976, the DLA stock fund unit costs have been established on 1 Oct for the entire fiscal year. (FY90 stock fund costs are \$0.56/gallon for the distillate and light oils and \$0.53/gallon for the residual and heavy oils).

PROPOSER OFFICE: EHSC, CEHSC-FU, Ft. Belvoir, VA

POC NAME: J. F. Donnelly

POC TELEPHONE #: CIV (703) 355-2238, MIL AV 345-2238

**SUBJECT: Energy Conservation Program**

**POLICY:**

- Department of the Army, Energy Resources Management Plan, FY86-FY95, 1 Sep 89
- Army Regulation 11-27, 13 Aug 89

**GUIDANCE:**

Energy conservation is directed by the Federal Energy Management Improvement Act (Nov 88). Energy conservation is critical to the defense mission and essential for controlling utility costs. Conservation also aids national efforts for pollution abatement. A strong program requires training O&M personnel, energyconscious design, and good facilities management and operation. Energy programs provide a major cost savings for the Army.

Within the Department of the Army, the Deputy Chief of Staff, Logistics (DCSLOG) has overall responsibility for energy conservation. AR 11-27 tasks the Chief of Engineers to develop and manage the facilities portion of the program.

**CRITICAL ISSUES:**

The cornerstone of an effective energy management program is the team concept. Minimally, the team should include the installation commander, Director of Logistics (DOL), DEH, energy coordinator, and building energy monitors.

The energy reduction goal for DOD and all other federal agencies is to reduce consumption by 10 percent in BTU per square foot between FY85 (base year) and FY95. The Army's goal, as assigned by DOD, is to reduce energy consumption by 8 percent in lieu of 10 percent, because of its good performance in the prior reporting period (FY75-85).

**TIPS:**

- Generate the active participation of all team members; this is the key to a successful program. Active involvement of the commanders is essential.
- Schedule periodic meetings with the energy team and the installation Commander.
- Remember that the awards program can also be an important ingredient to a successful program.

PROPOSER OFFICE: CEHSC-FU-N

POC NAME: Lou Keller

POC TELEPHONE #: CIV (703) 664-3078

**SUBJECT: Army Energy Conservation Awards Program**

**POLICY:**

- Department of the Army, Energy Resources Management Plan, FY86-FY95, 1 Sep 89, Paragraph 3.4
- Army Regulation 11-27, 13 Aug 89

**GUIDANCE:**

Energy conservation awards are presented to individuals, organizations, and installations in recognition of their energy saving efforts. These awards also motivate continued energy reduction achievements. The Army participates in two annual energy award programs—the Secretary of the Army Energy Conservation Awards and the Federal Energy Efficiency Awards. Also, some MACOMs have their own awards programs.

**CRITICAL ISSUES:**

The Army Energy Conservation Awards Program recognizes annual energy conservation achievements of installations and provides incentives to further reduce energy consumption. It recognizes the energy

conservation achievements and programs of those installations in three categories: active Army, Army National Guard, and Army Reserves.

The Federal Energy Efficiency Awards Program recognizes outstanding achievements in energy efficiency within the entire federal sector. The awards are presented annually, on the basis of achievements made during the previous fiscal year in three categories: organizational, individual, and special.

**TIPS:**

- Provide extensive public affairs coverage of the winners.
- Provide cash awards, where feasible.
- For the installation winners, provide funds for morale and welfare work when possible.

**PROPONENT OFFICE:** CEHSC-FU-N

**POC NAME:** Lou Keller

**POC TELEPHONE #:** CIV (703) 664-3078

**SUBJECT: Energy - Third-Party Contracting (TPC)**

**POLICY:** AR 420-49 (22 Jun 90) Heating, Energy Selection and Fuel Storage... Paragraph 3-5, Private Sector-Financed Energy Contracts

**GUIDANCE:**

TPC—Energy provides an economic alternative to the Military Construction (MILCON) Program. Legislative authority (10 U.S.C. 2394) permits contracts to purchase energy or fuel for terms up to 30 years. Currently, legislation (10 U.S.C. 2690) concerning fuel sources requires that the energy source selected must be the most cost effective over the life of the system. AR 420-49 includes latest DOD guidance in compliance with current legislation.

**CRITICAL ISSUES:**

Energy selection for new or replacement facilities should be based on the most cost effective for that system. Detailed DOD guidance for minimum documentation requirements is contained in the EHSC memorandum, CEHSC-FU-P, 12 Dec 88, subject: Private Sector-Financed Defense Energy Contracts (Third-Party Contracting for Energy—10 U.S.C. 2394).

**TIPS:**

- Submit careful and complete installation budget requirements must be submitted because the TPC—Energy moves costs from the construction accounts into the annual appropriation accounts.
- Contact the USAED Huntsville, which is designated as the technical center of expertise and is funded by EHSC to provide feasibility studies and engineering support.

**PROPONENT OFFICE:** CEHSC, CEHSC-FU, Ft. Belvoir, VA; Technical Arm: CEHND-ED-PM

**POC NAME:** J. F. Donnelly

**POC TELEPHONE #:**

CIV (703) 355-2238, MIL AV 345-2238; CEHND- ED-PM  
USAED Huntsville (205) 895-4414, MIL AV 788-4414.

**SUBJECT: Shared Energy Savings Contracting (SES)**

**POLICY:**

- Public Law 99-272(42 U.S.C. 8287). Title VIII— Shared Energy Savings, Section 7201, 7 Apr 86
- Public Law 100-615, (42 U.S.C. 8253) Federal Energy Management Improvement Act, 5 Nov 88. (FEMI Act)

**GUIDANCE:**

The SES legislation allows the heads of federal agencies to enter into unique contracts to save energy. Legislation authorizes contractor involvement in the installation, modification, and operation of energy-related equipment. Contracts may extend up to 25 years. The contractor is paid based on a share of the energy savings that result from the modifications. Huntsville Engineer Division is the center of expertise and will provide assistance in studies and project development.

**CRITICAL ISSUES:**

Installations can save energy and money without incurring the initial cost of equipment modification because the risk is placed on the contractor. The FEMI act requires agencies to implement procedures to enter into SES contracts. This act also states that cost savings realized from SES contracts will remain available for obligation for further energy-conservation measures.



#### TIPS:

Ensure that the government contract terms protect against contractor default and shutdown of critical facilities. The Huntsville Division is available to help once a potential project is identified.

PROPONENT OFFICE: CEHSC-FU-N; Technical Arm:  
CEHND-ED-PM

POC NAME: Lou Keller

POC TELEPHONE #: CIV (703) 664-3078; POC  
(CEHND-ED-PM) CIV (205) 895-4414, MIL AV 788-4414

#### **SUBJECT: Technical Assistance**

##### POLICY:

- AR 420 series
- TM 5-600 series
- ER 70-1-3
- ER 70-3-9

##### GUIDANCE:

The EHSC and the U.S. Army Corps of Engineer Laboratories—Construction Engineering Research Laboratory (CERL), Cold Regions Research and Engineering Laboratory (CRREL), and Waterways Experiment Station (WES)—provide a number of technical services to help DEHs facing facilities problems that are beyond the capabilities of the local work force.

EHSC services include inspections, technical surveys, and training to improve local operations for electrical, mechanical, structural, chemical, and sanitary facilities. The annual EHSC Support Services Guide details available services and points of contact.

Laboratory services include the following:

- CERL's Small Problems Program provides help with minor engineering difficulties, offering up to 2 days of free labor, phone consultations, or answers by correspondence. Site visits and more extensive assistance may be provided at the users' expense.
- CRREL and WES offer one-stop research and development service.
- Through EHSC and laboratory points of contact, installation managers may also access the services of the Corps support centers for the technical assistance programs: Environmental Technical Information System (ETIS), blast energy analysis, microcomputer support to army personnel, MicroPAVER, and construction automation support.

#### CRITICAL ISSUES:

Aging infrastructure demands intensive inspection, maintenance, repair, and revitalization. Expert technical services can help installation managers determine safe, cost-effective, and efficient ways to get the maximum productivity from their facilities, as well as give experienced advice on whether to retire worn-out infrastructure.

Questions and problems about proliferating regulatory requirements, especially in the environmental and natural resource management areas, can overwhelm the burdened DEH. Expert systems like ETIS and technical advice from the labs and EHSC can help installation managers get fast, accurate answers to their questions.

##### TIPS:

- Shop the EHSC Support Services Guide—it's your Yellow Pages.
- Build technical assistance into your annual work plan projections. Site visits from an inspection team can help determine the most pressing work requirements for the coming fiscal year.
- Identify the top five facility problems that exceed your staff's capability and research the potential for getting problem-solving assistance.
- See the Lessons Learned section, Subject: BMAR, PROPONENT OFFICE: CEHSC-FU

POC NAME: Evangelos P. Stoyas and Bernard S. Wasserman

POC TELEPHONE #:

EHSC (703) 355-2179/7558  
CERL Programs Office 800-USA-CERL ext. 205  
CRREL One-stop Office (603) 646-4229 WES Office of  
Technical Programs and Plans 800-LAB-6WES ext 2533

#### **SUBJECT: Fire Program Initiatives**

POLICY: AR 420-90, Fire Protection

##### GUIDANCE:

This regulation defines policies and responsibilities and sets standards and procedures for fire protection as a facilities engineering function. Chapter 1 assigns OCE, MACOM, installation and FE and DEH responsibilities. It is currently under revision with expected publication date in FY92.



**CRITICAL ISSUES:** (Each "Issue" is keyed to the identically numbered "Tip.")

1. MACOMs conduct fire protection operational readiness inspections (FPORIs) every 18 months.
2. Establishes a Fire Protection Management System (FIRMS) called "FIREWARE" to manage daily DEH fire department administrative functions (revised AR 420-90).
3. Recommends adoption of new Federal Fire Service Certification System undergoing Phase 1 test site applications at 13 DOD installations (revised AR 420-90).
4. Assigns the fire department as the first to respond to all hazardous materials incidences (revised AR 420-90).
5. Requires cardiovascular physical fitness training programs developed by the Air Force for all fire department members (revised AR 420-90).
6. Establishes Army Firefighter of Year award presented at the annual Worldwide Army Fire Chiefs Training Session (revised AR 420-90).

**TIPS:**

1. Installation fire departments should conduct quarterly self-inspections using FPORI format to prepare for formal MACOM FPORIs.
2. CERL has completed FIRMS hose and hydrant modules, and user manuals. The building inspection module is near completion, and EHSC is developing support center requirements.
3. Installations should continue any existing National Fire Protection Association (NFPA), professional board-approved, certification programs because reciprocity with the new federal system is expected.
4. New fire department hazardous material "first responder" guidance message, prepared by an EHSC, MACOM, and installation task force working group, is near completion.
5. Fire departments can order the IBM-compatible software and associated equipment for physical fitness program. Air Force pamphlet 92-3 details the cardiovascular and muscular strength elements of the program.
6. DEHs should encourage submissions for annual Firefighter of Year award and concurrently nominate these staff members for local special act or sustained superior performance awards under AR 672-10 incentive awards program.

**PROPONENT OFFICE:** USAEHSC, CEHSC-FB-I, Ft. Belvoir, VA 22060-5516

**POC NAME:** Bruce A. Park, Army Fire Services Administrator

**POC TELEPHONE #:** CIV (703) 355-3580/2347, MIL AV 345-3580/2347

**SUBJECT: Fire Protection Program**

**POLICY:**

- AR 420-90, Fire Protection
- TM 5-695, Maintenance of Fire Protection Systems
- TM 5-315, Fire Protection Procedures (under revision)
- MIL-HDBK-1008A, Fire Protection for Facilities, Engineering, Design, and Construction

**GUIDANCE:**

Every Army activity will have a fire protection program that is based on its size, mission, and available resources. DEHs manage the fire protection element of the FE organization. The fire protection division's mission is to maximize personnel safety and minimize property loss through well-trained firefighting, fire prevention, and technical services forces. The fire chief may commandeer available resources at the fire scene and call for mutual aid assistance.

**CRITICAL ISSUES:** (Each "Issue" is keyed to the identically numbered "Tip.")

1. Appendix B of AR 420-90 requires self-inspections using fire protection operational readiness inspections (FPORIs) format.
2. Fire department must submit input to the FE and DEH annual work plan (AWP) AR 420-17 and DA PAM 420-6.
3. Mutual aid agreements are encouraged with all surrounding communities.
4. Recurring proficiency training programs by qualified instructors use AR 420-90 and TM 5-315.
5. Structural and crash fire truck requirements.
6. Each installation will furnish a fire prevention regulation.
7. Project design review and maintenance of fire protection systems use MIL-HDBK-1008A and TM 5-695.

**TIPS:**

1. Quarterly self-inspections will ensure a high-quality program rating when MACOMs conduct their FPORI every 18 months.
2. This AWP is essential in obtaining mission resources.
3. Mutual aid agreements provide invaluable support during large fires.
4. Develop monthly training schedules using DA Form 5376-R in AR 420-90.
5. Fire flow and response times and distances determine structural requirements, whereas aircraft movement and size determines crash fire vehicle requirements.
6. Fire prevention regulation contains inspection frequencies, seasonal campaigns, and educational briefings for new personnel and base organizations.

7. Inclusion of proper fire measures in new and existing facilities and maintenance of fixed fire protection systems guarantees the most economy and least interruption of essential missions.

PROPONENT OFFICE: USAEHSC, CEHSC-FB-I, Ft. Belvoir, VA 22060-5516.

POC NAME: Bruce A. Park, Army Fire Services Administrator

POC TELEPHONE #: CIV (703) 355-3580/2347, MIL AV 345-3580/2347

**SUBJECT: Corrosion Control Program**

**POLICY:**

- Underground storage tanks (USTs): AR 200-1, AR 420-49, EPA Regulations and State Regulations
- Gas distributions systems: AR 420-49, TM 5-654 and 49 CFR, Part 192
- Potable water distribution piping and storage tanks: AR 420-46
- Steam, hot water, and chilled water distribution systems: AR 420-49 and TM 5-652
- Potable water distribution systems (internal control): AR 420-49 and TM 5-660
- Industrial water facilities including steam boilers, hot water heating systems, chilled water systems, dual heating and cooling systems, and cooling towers: AR 420-49, TM 5-650, TN 86-3 and TN 86-7

**GUIDANCE:**

Corrosion control is required by Army policy and public law because it improves safety and reliability while decreasing environmental risks and life cycle costs associated with facilities operation and maintenance. Application of corrosion control is a cost effective means of preserving existing facilities, enhancing the longevity of new facilities, and ensuring facilities' material performance. Corrosion controls ensure that materials in direct-buried or submerged facilities perform as expected, and water treatment protects facilities against corrosion and scale formation.

**CRITICAL ISSUES:**

- UST regulations include extensive corrosion control requirements.
- Installations must comply with the Natural Gas Pipeline Safety Act (49 CFR, Part 192).
- Improvements in industrial water treatment are required to improve economy, safety, and energy use of O&M activities.

**TIPS:**

- Perform a comprehensive corrosion-reduction survey and evaluation of each installation.
- Train installation personnel in corrosion control techniques.
- Routinely test and repair cathodic protection systems.
- Routinely monitor and treat industrial water systems.
- Coat and cathodically protect direct buried or submerged, metallic facilities, and equipment.
- Automate chemical feed and blowdown for industrial water systems.
- Achieve biological control of cooling tower water to eliminate Legionnaire's disease.
- See the Lessons Learned section, Subject: Corrosion Control Practices Enhance Safety.

PROPONENT OFFICE: EHSC, ATTN: CEHSC-FU-W

POC NAME: Malcolm E. McLeod and Thomas W. Spoerner

POC TELEPHONE #: CIV (703) 355-3151 or 355-3208, MIL AV 345-3151 or 345-3208

**SUBJECT: Developing Installation Recycling Programs**

**POLICY:**

- AR 420-47, 1 Dec 84
- AR 11-28, 2 Dec 75

**GUIDANCE:**

Installations are encouraged to establish or expand source separation and recycle programs to reduce the waste stream, prevent pollution, and conserve natural resources. Considerable financial incentives exist for installations to recover energy from waste.

**CRITICAL ISSUES:**

- All proceeds from the sale of recyclable materials may be used by Army activities having qualifying recycling programs.
- An economic analysis or program evaluation should be conducted according to AR 11-28 before initiating any program.
- Recycling efforts should be directed toward waste stream reduction, pollution prevention, and resource conservation.

**TIPS:**

- Be aware of the various recycling methods.
- Participate in a joint or regional program operated by the civilian community.

- Coordinate closely with the Defense Resale and Marketing Office (DRMO).
- Use waste as a fuel supplement.

PROPOSER OFFICE: CEHSC-FU

POC NAME: Paul M. Lin

POC TELEPHONE #: CIV (703) 355-7962, MIL AV 345-7962

## **SUBJECT: Expanded Self-Help and Self-Help**

POLICY: AR 420-22 (Draft under development to current, 6 Jul 76)

### **GUIDANCE:**

The Self-Help Program involves the occupants of family and unaccompanied personnel housing and occupants of other facilities in voluntarily completing maintenance and repair work and minor construction and improvements to their facilities. The Expanded Self-Help Program involves the occupants of all facilities in voluntarily accomplishing larger projects for improving their facilities and common use areas.

### **CRITICAL ISSUES:**

The Self-Help and Expanded Self-Help Programs are voluntary, subject to all statutory and regulatory limitations, in accordance with the installation design guide, and in accordance with the Commanders' priorities.

### **TIPS:**

- Tailor the Self-Help and Expanded Self-Help Programs to fit each installation's needs and abilities.
- Projects that would normally take years to finance and accomplish using normal methods can be done more quickly and for less cost if occupants do the work themselves.
- Projects that can be completed under these programs are not limited in scope or magnitude.
- CERL has developed a Self-Help Management system for an IBM PC that makes managing and accounting for these projects and materials easy.

PROPOSER OFFICE: CEHSC-FB-S

POC NAME: Chuck Racine

POC TELEPHONE #: CIV (703) 664-1511, MIL AV 345-1511

## **SUBJECT: DEH Support for MWR Activities**

POLICY: AR 215-1, The Administration of Army Morale, Welfare, and Recreation Activities (MWR) and Nonappropriated Fund Instrumentalities (NAFIs)

### **GUIDANCE:**

This regulation establishes policies, prescribes procedures, and assigns responsibilities governing the Army's MWR system and NAFIs within the DA. Chapter 6, Real Property Support for MWR activities, contains the policy and guidance on the management of MWR program real property support. Appendices C and E contain additional information.

### **CRITICAL ISSUES:**

- Contains the categories of MWR activities and assigns each MWR activity to a category.
- Contains the policy on Real Property Support to MWR activities and outlines what type of DEH support is authorized to be funded with appropriated funds.
- Appendix C provides a list of activities authorized appropriated fund support (such as maintenance and repair, utility support, and common DEH services). It also defines the extent to which appropriated fund support is permissible.
- Appendix E provides a list of those activities and authorized appropriated fund construction support. It also defines the extent to which appropriated fund support is permissible.

### **TIPS:**

- If appropriated funds are not available, nonappropriated funds may be used in the support of MWR facilities.
- Trash and garbage removal is not authorized for military exchanges in CONUS.
- For purposes of this regulation, Alaska and Hawaii are considered overseas locations.
- Appropriated funded grounds maintenance is not authorized for golf courses.

PROPOSER OFFICE: CEHSC-FB-I

POC NAME: Eric Loughner

POC TELEPHONE #: CIV (703) 355-3580, MIL AV 345-3580



**PLANNING  
AND  
REAL PROPERTY**





## **SUBJECT: Master Planning**

**POLICY:** AR 210-20, Master Planning for Army Installations, Jun 87

### **GUIDANCE:**

The master plan is an installation commander's plan for managing and developing the installation's real property. It integrates and analyzes the plans prepared by the DEH, as well as other garrison and tenant activities, higher headquarters, and those of the surrounding communities, and provides for an orderly development of real property resources. The master plan generally encompasses 20 years and is based on various Army planning documents, including The Army Plan, the Army Force Structure Component System, the Army Long-Range Facility Plan, and the Army Stationing and Installation Plan. However, the master plan must be responsive to the Army's 6-year budget window as identified in the Army's program objective memorandum guidance. All facility management decisions (including space utilization and construction) should be analyzed on the basis of the planning methodology. The master plan process must interrelate with the planning analysis as identified in the environmental process.

### **CRITICAL ISSUES:**

It is important that the Commander and staff actively advocate the master plan. It is also critical that they fully understand the plan and the planning process.

The master plan should be developed in conjunction with the installation's environmental management program. The plan can be used to identify areas of sensitivity and hazard (such as hazardous waste areas, wetlands, archeological sites, and endangered species habitats). Both the environmental and the planning offices should be involved in defining long-term installation development.

### **TIPS:**

- Schedule a series of master planning briefings with major installation unit commanders and organization directors to help them better understand the reasons for the master plan.
- Focus the briefings on how the master plan serves as a management tool for the organization.
- Use maps, drawings, and charts to show the plan as a living, working tool.
- Discuss long-term goals as well as immediate issues relating to the organization. The master plan should relate the installation's long-term goals to funding strategies for military construction, Army (MCA); OMA; and nonappropriated funds.
- Schedule at least semi-annual briefings with the command staff (installation Commander and Chief of Staff) to discuss the master plan and to gain command staff support for the planning process.

- Show the command staff how to use the master plan to solve short-term facility management issues as well as long-range goals. The command staff briefing should relate planning to the overall facility strategy that the DEH has formulated (OMA, MCA, and Army Family Housing).
- Hold the briefings in an informal setting to generate open dialogue. Two-way communication between the command and the DEH's planning staff is essential.
- Use the Public Affairs Office to market the master plan. Put articles in the installation newspaper, as well as local municipalities' circulars, so that the community is aware of the goals and objectives of the plan.

**PROPOSER OFFICE:** EHSC Planning Division

**POC NAME:** Jerry Zekert

**POC TELEPHONE #:** CIV (703) 355-7749, MIL AV 345-7749

## **SUBJECT: Real Property Assets Accountability**

### **POLICY:**

- AR 405-45, Inventory of Army Military Real Property, 18 Mar 77
- AR 420-17, Ch 4 & 5, Real Property and Resource Management, 13 Dec 76
- AR 405-XX (Draft), Management of Real Property, 5 Jan 90

### **GUIDANCE:**

The Real Property Assets Accountability system maintains records of real property on both a quantitative and monetary basis, and establishes and maintains an up-to-date real property assets inventory.

### **CRITICAL ISSUES:**

- An accurate real property inventory data base supports installation, major command, and higher headquarters initiatives.
- Current real property information supports congressional inquiries, base closure, and restationing decisions.
- An up-to-date real property assets inventory also supports new projects and in-house projects by DEH and districts.

### **TIPS:**

- Review and update real property inventory prior to quarterly Integrated Facilities System submissions.
- Check critical fields and specific category codes for accuracy.

- Establish a good working relationship with in-house DEH offices, installation, districts, and higher headquarters by coordinating efforts.

PROPOSER OFFICE: EHSC, CEHSC-FP-R, Bldg. 358, Rm. 6B, Ft. Belvoir, VA 22060

POC NAME: Gay Tissaw, Chief, Real Property Branch, Directorate of Facilities Engineering

POC TELEPHONE #: CIV (703) 355-7749/7750, MIL AV 345-2001/2002

## **SUBJECT: World War II (WWII) Temporary Buildings**

### **POLICY:**

- Dispose of all WWII temporary buildings not required for a mobilization mission or a current need.
- Simultaneous maintenance, repair, and construction projects may not exceed a combined cost of \$20 per square foot.
- The addition of metal siding must be economically justified over the expected life of the building.
- Limitations are contained in AR 420-10. The revised version of AR 420-70 that will be issued during FY91 will contain additional guidance with respect to maintenance and repair standards for WWII wood.
- The rules governing WWII temporary buildings also apply to Army Reserve temporary buildings.

### **GUIDANCE:**

WWII temporary buildings are not exempt from regulations governing space criteria or use. Upgrading WWII temporary buildings must be based on a critical space shortage and be economically justified on the basis of maintenance, repair, and construction costs. Projects exceeding \$20 per square foot that are forwarded for HQDA approval will require a full DA Form 1391, economic justification, space utilization study of all permanent building space on the installation, statement of operational necessity, and decision analysis.

### **CRITICAL ISSUES:**

WWII temporary buildings are uneconomical to operate, maintain, or repair. They represent a severe fire (safety) hazard and cause low morale among personnel.

### **TIPS:**

- Keep WWII temporary buildings that are retained in good condition.
- To determine another course of action, review those WWII temporary buildings that are approaching, or have exceeded, the \$20 per square foot limitation.

- Dispose of WWII temporary buildings that do not meet the need or economic justifications for retention.

PROPOSER OFFICE: EHSC, ATTN: CEHSC-FB-S, Ft. Belvoir, VA 22060-5516

POC NAME: Chester A. Kirk

POC TELEPHONE #: CIV (703) 355-2359, MIL AV 345-2359

## **SUBJECT: Comprehensive Land Use Planning (CLUP)**

POLICY: DOD Instruction 3030.2, Community Planning and Impact Assistance, 25 May 83

### **GUIDANCE:**

CLUP is mutual and cooperative land use planning and zoning between an installation and local communities. The process provides for retaining private property land values and community development options while supporting continued military missions and operations.

Installations must follow the CLUP process because Army missions and equipment often disturb the communities surrounding the installation. Disregarding community interests when implementing operational changes may ultimately lead to limitations on conducting future military operations.

DOD Office of Economic Adjustment (OEA) sponsors the CLUP program by providing financial support to local communities for planning. The Army has a working CLUP initiative at Fort Bragg, North Carolina, and has requested CLUP efforts at several other installations. MACOMs have identified where CLUP efforts should be started.

The CLUP program has resulted in compatible land uses that accommodate community growth and installation missions, future installation viability, channels for future dialogue, and a good-neighbor attitude. The CLUP timetable is between 1 and 5 years because it may take as long as 2 years for the community to agree to the process and request the grant application.

### **CRITICAL ISSUES:**

One important ingredient to a successful CLUP is building a community consensus on the need for the study, the organization of the study group, and the scope of work. Each local governing body within the CLUP area must be willing to agree to the recommendations. A key milestone is the completion of Installation Compatible Use Zone noise contours.

TIPS:

- Schedule a CLUP briefing by OEA for the installation Commander.
- After obtaining the Commander's commitment, contact surrounding communities.
- Schedule an aerial fly over and photograph or videotape incompatible land uses.
- Share all information with the community and, if possible, mitigate land use conflicts in the master plan.

PROPOSER OFFICE: Installation Planning Division,  
Office of the Assistant Chief of Engineers, DAEN-ZCI-P

POC NAME: Gregory Brewer

POC TELEPHONE #: CIV (703) 693-4583, MIL AV 223-4583

**SUBJECT: Installation Planning Board (IPB)**

POLICY: AR 210-20, Master Planning for Army Installations, Jun 87

GUIDANCE:

All installations are required to have a planning board comprising representatives of the command, operational, engineering, and planning interests, including tenant activities. Typically, meetings are held at least twice a year, but additional meetings may be held as needed.

The planning board acts on a wide range of comprehensive planning issues. The board advises the installation Commander on priorities; future plans; amendments; long-range policies, strategies, and programs; and short-range development projects.

CRITICAL ISSUES:

The IPB must act on the entire range of comprehensive planning issues. These issues include not only land use and long-range facilities development issues but also transportation, utilities, environmental and natural resources, installation design guidelines, and various other operational elements. A specific charter, by-laws, or standard operating procedures must be developed for the IPB to establish its responsibility in overall installation management.

The planning board is responsible for recommending site approval. Site approval implies more than siting of new facilities; rather, it includes additions to existing facilities, replacement of a facility at the same location, and changes in facility use.

The planning board must review and recommend priorities for both the long- and short-range facility development projects. The membership must ensure these priorities comply with the approved installation master plan.

TIPS:

- Recommend creation of a working planning board (comprising representatives of the various IPB organizations) to evaluate, at a working level, facility management (space and planning) initiatives. The group can be more involved in the facility resource priority process for military construction, Army (MCA); nonappropriated funds; Army Family Housing; and operations and maintenance, Army (OMA) to ensure resources comply with the installation planning goals and objectives.
- Recommend expanding the IPB's responsibilities to include space utilization issues and facility resource decisions. Integrating space utilization into the IPB goals will promulgate the planning process into short-term facility reassignments. Integrating the facility resource decisions within the roles and responsibilities of the IPB will promulgate the planning process into the real property maintenance activities programming strategy. The IPB could develop funding strategies of OMA, nonappropriated funds, and MCA that relate to the installation's long-term development goals.
- Establish an IPB board room consisting of a large conference table and a floor-to-ceiling map showing the entire installation. Also provide audio-visual equipment, such as a slide projector and overhead projector. Some installations have had models of the installation developed for use as planning tools.

PROPOSER OFFICE: Planning Division, CEHSC

POC NAME: Jerry Zekert

POC TELEPHONE #: CIV (703) 355-7749, MIL AV 345-7749

**SUBJECT: The Real Property Planning and Analysis Systems (RPLANS & HQRPLANS) "The Right Tool for a Tough Job"**

POLICY:

- AR 210-20
- AR 415-28
- AR 405-45
- AR 415-15

#### GUIDANCE:

The Army's need for an automated tool to support planning and stationing has moved from very important to critical over the past several months, in light of the studies now being done on changing the size and shape of the Army. The RPLANS and its MACOM- and DA-level counterpart, HQRPLANS, are already being used to support the planning and stationing initiatives that will shape the future, and very existence, of Army installations.

#### CRITICAL ISSUES:

RPLANS is an automated, master planning tool that will enable planners and programmers to calculate peacetime facility space allowances readily and efficiently, and compare space allowances to available real property assets for a wide range of facilities. The systems draw on a number of data bases and are designed to work with either IFS, IFS-M, or the desktop reference for real property management (DR REAL) as a source of real property data.

Installation-level RPLANS supports a variety of DEH operational needs and planning activities, including preparation of the Tabulation of Existing and Required Facilities, construction program development, stationing analysis, unit and organization facility requirements analysis and utilization, and functional area assessments. HQRPLANS will be a valuable tool in reviewing the real property impacts of a wide range of stationing actions and force structure changes. It can also assist in reviewing existing facility situations; validating military construction, Army programming; projecting replacement and revitalization costs; and assessing impacts of policy changes.

RPLANS is being tested at Fort Benning, Georgia; Fort Bragg, North Carolina; Kaiserslautern Community, West Germany; and Camp Humphreys, Korea. Advanced testing has also begun at Fort Chaffee, Arkansas, as part of the Joint Readiness Training Center, and in Panama in support of the treaty implementation. The system will be fielded in FY91 with fielding completed by FY92.

The prototype HQRPLANS has been used extensively to support the current base realignment and closure initiative. The HQRPLANS prototype will be completed during FY90. When it is operational, HQRPLANS will reside on a minicomputer under control of EHSC and will be linked to the PAX communications system. Under the current prototype, the director of management and the Office of the Chief of Staff, Army, will be involving all 1,250 continental U.S. installations in the next round of base closures and realignments.

#### TIPS:

- Make every effort to ensure that data used by RPLANS and HQRPLANS are as accurate as possible. The data must be based on IFS, IFS-M, DR REAL and other real property data systems, CAPCES, and Army Stationing and Installation Plan.
- Obtain EHSC and USACE assistance in establishing programs to review, evaluate, and correct these data bases. The accuracy of these data bases may determine the future of many Army installations.

PROPOSER OFFICE: DAEN-ZCI/CEHSC-FP

POC NAME: Stewart M. Grayson

POC TELEPHONE #: CIV (703) 355-7750, MIL AV 345-7750

#### **SUBJECT: Automated Graphics Systems (AGS) and Computer-Aided Design and Drafting (CADD)**

POLICY: AR 25-3, Army Information Resource Management Program (Draft), Paragraph 1-6

#### GUIDANCE:

The Planning Division in the Directorate of Facilities Engineering is EHSC's functional proponent for DEH support of AGSs. The Architectural Branch in the Engineering Division of the Military Programs Directorate at HQUSACE is HQ's proponent for district support of CADD.

The Waterways Experiment Station CADD center is the engineer team's vehicle for sharing information and development work and for minimizing duplication of effort, while retaining local autonomy and decentralized organizational structures. The WES coordination efforts are accomplished using Single-Discipline Task Groups (SDTG). A DEH SDTG has been formed with MACOM, installation, division, and district representatives.

Automated graphics uses a computer to perform design and drafting tasks that have traditionally been accomplished manually. Automated graphics tasks include automated mapping, computer-aided facility management, geographic information systems, management, and computer-aided design and drafting. Properly implemented, automated graphics systems can assist DEHs in planning, operating, and maintaining installations.

#### CRITICAL ISSUES:

Numerous suppliers carry one or more elements of AGS. EHSC is currently developing Technical Note 25-1-1, which recommends that DEHs ensure that new automated graphics equipment can provide products compatible with the Corps-wide computer (Intergraph).



#### TIPS:

- As you build the system, create a graphics interface with RPLANS and Engineered Management Systems, data interface with IFS-M, and ensure the system accepts district design files so that they can be used for installation-level management during the life of a new building.
- Ensure that programmed AGS and CADD are compatible with the Corps standard database architecture.

PROPONENT OFFICE: Planning Division, EHSC

POC NAME: Stewart Grayson

POC TELEPHONE #: CIV (703) 355-7749, MIL AV 345-7749

### **SUBJECT: The Army Stationing and Installation Plan (ASIP)**

#### POLICY:

#### GUIDANCE:

The ASIP is the official base line population data for installation planning and programming. It provides the force to be supported for **all** active Army installations worldwide. The data is extracted from other official sources such as the Force Accounting System (FAS), the Army Authorization Documents System (TAADS), the Army Training Requirements and Resources System (ATRRS) and MACOM input. Non-Army tenant data is included. MACOMs verify the data every six months. The ASIP is the only acceptable data base for use in determining MCA construction based on population requirements and is critical when doing base closure/realignment analyses.

#### CRITICAL ISSUES:

- The ASIP is critical for conduction planning exercises, i.e. determining facility requirements; preparing the installation master plan; analyzing force relocations; determining base closure candidates; implementing facility discipline policies.
- The ASIP is used to validate construction requirements and prepare the DD Form 1390. HQDA reviews project validity based on this document.
- The ASIP provides general information for Congressional Exhibits and briefings at all levels.
- MACOMs and installations must seriously review the ASIP when requested for the ASIP to accurately reflect the known force structure.

#### TIPS:

- Use the ASIP when justifying MCA projects.

- Use the ASIP for facility assignments and space utilization. It provides the capability of assigning facilities based on requirements not unit desires.

PROPONENT OFFICE: Office, Asst. Chief of Engineers, DAEN-ZCI-P, Rm 1E671, Pentagon, Washington D.C. 20310-2600

POC NAME: Gregory Brewer

POC TELEPHONE #: CIV (703) 693-4583, MIL AV 223-4583

### **SUBJECT: Mobilization Master Planning**

#### POLICY:

- Engineering Pamphlet 500-1-2, Mobilization and Operations Planning Systems, May 84
- Draft AR 415-50, Basic Facilities and Space Criteria for Construction at United States Installations in Event of Mobilization

#### GUIDANCE:

Each installation with a mobilization mission is required to establish a mobilization master plan. The plan should portray the existing physical composition of each mobilization installation, provide for an orderly, comprehensive development to support its full mobilization mission, and be adaptable to total mobilization.

The mobilization master plan is formulated using the established peacetime planning process. Basic facilities and space criteria are to be based on draft AR 415-50. Population information will be based on the established troop stationing plans, as well as mobilization TDAs. Facility requirements should be based on the sustained population loading of the installation.

#### CRITICAL ISSUES:

An important issue to installation mobilization master planning is its relationship to peacetime planning. The mobilization master plan is a component of the installation master plan. Sitings for mobilization projects must not conflict with the peacetime plan. Further, the same planning process should be used to formulate a facility management strategy.

#### TIPS:

- Focus the plan on the mobilization mission, limitations of the physical resources to support the mission, and recommendations to overcome the limitations.
- Remember that the success of any plan is contingent on the support of the installation community.

- Recommend that planners relate the mobilization plans to their organization's installation operational mobilization plan.
- Encourage installation staff to coordinate their input to the planning document (both in peacetime and mobilization scenarios) to improve the document's overall strength.
- Hold quarterly planning meetings with the major installation management staffs and include mobilization planning on the agenda.

PROPOSER OFFICE: Architectural and Planning Branch,  
Directorate of Military Programs, CEMP-EA

POC NAME: Dave Webber

POC TELEPHONE #: CIV (202) 272-8818, MIL AV 285-8818

## **SUBJECT: Facilities Utilization**

POLICY: AR 405-70 provides policy on space allowances and standards. Specific design criteria are available on the PAX system through Army Criteria Tracking System or Design Construction Information System and in Architectural and Engineering Instruction, **Design Criteria**, 14 Jul 89. Army policy requires maximum utilization of existing facilities using validated space requirements.

### **GUIDANCE:**

Reduced budgets and force structure require the Army to reduce facilities base. Facilities discipline includes validating facility requirements, using existing space fully based on valid requirements, and disposing of unneeded facilities. Facilities requirements are determined on the basis of approved force structure, authorized strengths from the Army Stationing and Installation Plan, and standard space criteria as defined in the sources listed above.

### **CRITICAL ISSUES:**

Commanders must manage the use of space wisely and within validated requirements. They must consolidate activities into the best facilities, dispose of unneeded facilities, and concentrate resources on the proper maintenance of a reduced-facilities base. Generally, unit integrity is not a sufficient reason to underutilize facilities or retain those that are unneeded.

### **TIPS:**

- Take advantage of Huntsville Division's RPMA courses.
- Keep an accurate real property inventory data base to allow immediate recognition of utilization problems, unneeded facilities, and facility shortfalls.
- Avoid sprawling into unused space.
- Do not retain facilities because of possible future requirements.

PROPOSER OFFICE: HQDA, Office of the Assistant  
Chief of Engineers, DAEN-ZCI-P

POC NAME: Randolph Klug

POC TELEPHONE #: CIV (202) 693-4583, MIL AV 223-4583

## **SUBJECT: Alternative Utilization of Military Facilities**

POLICY: McKinney Homeless Assistance Act (PL 100-77)  
and Alternative Utilization of Military Facilities (EO 12682)

### **GUIDANCE:**

The references under POLICY require the US Army to report all buildings and properties that are unutilized or underutilized to HUD. Properties are evaluated by HUD for suitability for uses for the "homeless." Data is collected quarterly. Properties that are considered suitable are advertised in the Federal Register and interest in the property may be expressed by bonafide homeless assistance providers or other federal governmental agencies. Time limits and criteria exist if demolition of the facility is desired. Contact HQDA, DAEN-ZCE-P at POC listed below should you have questions in satisfying PL 100-77 and EO 12682 requirements.

### **CRITICAL ISSUES:**

The McKinney Homeless Assistance Act must be complied with. Information must be provided to HQDA in a timely manner. All buildings and real property determined to be unutilized or underutilized in the annual Installation Commanders Real Property Utilization Survey (ICARPUS), conducted in accordance with AR 405-70, will be screened by HUD. All Army properties will be surveyed annually. No agencies, installations or properties are exempt from this survey requirement.

### **TIPS:**

- If in doubt about reportability of a facility, contact POC below.
- Demolish facilities as soon as reporting time limits permit. Delays may mean you have to report the facility again. For demolition criteria and time limits, contact your MACOM or POC below.

PROPOSER OFFICE: Office, Asst. Chief of Engineers,  
DAEN-ZCI-P, Pentagon, Washington D.C. 20310-2600

POC NAME: Robert Conte

POC TELEPHONE #: CIV (703) 693-4583, MIL AV 223-4583

## **SUBJECT: Environmental Aspects of Master Planning**

**POLICY:** AR 210-20, Master Planning for Army Installations, requires incorporation of environmental plans listed in AR 200-1 and natural and cultural resource plans required by ARs 420-74 and 420-40 in the master plan and an environmental analysis of the plan to comply with National Environmental Policy Act (AR 200-2).

### **GUIDANCE:**

The installation master plan provides a tool for the management and orderly development of real property resources (land, facilities, and infrastructure) to accomplish assigned and projected missions. It should raise flags when proposals conflict with other functions, organizations, or the law. It is a way to generate proactive environmental actions and management by indicating environmental constraints and sensitive areas and by providing a narrative analysis of installation capabilities. The plan is also the environmental tie to surrounding local communities.

### **CRITICAL ISSUES:**

The environmental overlay will indicate environmentally sensitive areas such as wetlands, flood plains, landfills, hazardous and toxic materials areas, endangered species habitats, and historical features and is the foundation for assessing the environmental impact of the installation master plan. The required environmental documentation of the master plan should address the plan's environmental impacts. However, project-specific environmental documentation must still be developed for each project.

### **TIPS:**

- Integrate environmental concerns into the master planning process.
- Avoid potential environmental problems by developing good environmental planning through the installation master plan.
- Consider the environmental consequences of any decisions that are made—Commanders, DEHs, and their employees can be, and have been, held legally responsible for violating environmental law.

**PROPONENT OFFICE:** HQDA, Office of the Assistant Chief of Engineers, DAEN-ZCI-P

**POC NAME:** Gregory Brewer

**POC TELEPHONE #:** CIV (202) 693-4583, MIL AV 223-4583

## **SUBJECT: Base Closure Programs**

### **POLICY:**

- Message, DAEN-ZCR-R, DTG 121649Z Jan 89, SUBJECT: Base Closure and Realignment—Construction and Operation and Maintenance
- Message, DAEN-ZCZ-Z, DTG 081613Z Feb 90, SUBJECT: Recent Base Realignment
- AR 210-20, Master Planning for Army Installations, Jun 87

### **GUIDANCE:**

The Army is conducting various base realignment and closure (BRAC) actions and studies. Congress has approved the closing of more than 76 installations, as well as numerous mission realignments. The Army identified this initiative as BRAC I, which was intended to improve operational efficiencies within DOD. Special congressional legislation identified the process of closure, environmental assessment, and funding.

DOD has directed the armed services to initiate further BRAC studies. The most recent DOD study is called "BRAC II," which identifies realignment and closure options that would allow DOD to meet the future reduced DOD budgets. DOD has identified more than 13 additional installations for closure as well as numerous realignments. Each realignment or closure must meet statutory environmental and mission realignment (PL USC 2687) requirements. Funding for construction and environmental restoration will be provided within normal DOD appropriations.

Other studies are currently underway to address various scenarios from DOD. Further, the Army is analyzing the needs for the future TOE and TDA Army. These studies may result in additional realignment and closure actions.

### **CRITICAL ISSUES:**

Installations must ensure prudent management of scarce real property maintenance activities (RPMA) funds. RPMA at BRAC installations must be performed at the minimum essential levels necessary to support an acceptable living and working environment.

Although installations will be required to respond to many stationing scenarios, each must ensure that sound planning analyses (as identified in AR 210-20) are accomplished. DEH should ensure that the master plan can respond to future requirements as well as identify development constraints. Further, the environmental assessment process must be accomplished in conjunction with any stationing and facility decisions.

As many missions are realigned, only limited military construction resources will be available. Installations should consider the use of existing assets first. In order to do so, installations must be committed to maintaining an accurate installation real property data base. The success of any planning strategy is contingent upon an accurate installation real property data base.

TIPS:

- Emphasize planning, especially when considering the many changes in stationing.
- Remember that an installation master plan can provide the direction, goals, and objectives (and also constraints) involved in making sound facility decisions.
- Remember also that the installation master plan can be used to evaluate allocation of RPMA resources.

PROPOSER OFFICE: Planning Division, CEHSC

POC NAME: Jerry Zekert

POC TELEPHONE #: CIV (703) 355-7749, MIL AV 345-7749

# **HOUSING**





## **SUBJECT: Housing Management Regulations**

**POLICY:** AR 210-50, Installation Housing Management, 24 Apr 90

### **GUIDANCE:**

This regulation consolidates AR 210-6, Furnishings Management; AR 210-11, Unaccompanied Personnel Housing (UPH) Management; AR 210-50, Family Housing Management; and AR 210-51, Army Housing Referral Service Program. It sets forth the policies, procedures, and responsibilities for managing family housing, unaccompanied personnel housing, guest housing, housing referral, and housing furnishings. The regulation is arranged on a functional basis by chapter. Each chapter covers a function pertinent to each of the three types of housing—family, UPH, and guest. In some cases, the entire chapter is basically generic; that is, it covers all three housing types.

In other cases, the chapter is divided into both generic and specific sections. When this occurs, the first section is generic (applying to all three housing types), and subsequent sections address specific housing types. In the latter instance, the user must read both the generic and specific sections applicable to the type of housing under consideration.

### **CRITICAL ISSUES:**

Housing is a highly visible program that is closely watched by Congress, the Office of Management and Budget, the Department of Defense, and Army leadership. Because housing affects readiness and morale of soldiers, the Army Family Housing appropriation is one of the most scrutinized appropriations managed by the Army. Statutory and administrative limitations require close management by the housing manager, as well as the DEH. A 1 percent drop in housing utilization worldwide costs the military pay appropriation as much as \$10.9 million a year.

### **TIPS:**

- Ensure the housing manager position is filled by a professional housing management officer, GS-1173.
- Ensure the housing manager is provided with the staff and organization (AR 5-3) necessary to perform the mission.
- Ensure close coordination between the housing and facilities management sections of the DEH to minimize administrative and engineering downtime and to maximize occupancy.
- Become personally involved in the management of housing and know the regulatory requirements of the program.
- See the Lessons Learned section, Subject: Family Housing.

**PROPOSER OFFICE:** Army Housing Office (CEHSC-H)

**POC NAME:** E. A. Wilkerson

**POC TELEPHONE #:** CIV (703) 355-2401, MIL AV 345-2401

## **SUBJECT: General Officer Quarters Management**

**POLICY:** AR 210-13, General and Flag Officer Quarters (GFOQ) and Installation Commanders Quarters (ICQ) Management, 30 Oct 86

### **GUIDANCE:**

This regulation prescribes policies, procedures, and management responsibilities for furnishing, operating, maintaining, repairing, and improving quarters designated for and occupied by general officers and civilians of comparable grade. The regulation addresses effective stewardship of these highly visible quarters, while emphasizing the occupants' special needs. Chapter 4 of AR 210 B also applies to installation commanders in the grade of colonel. It also mandates a long-range maintenance plan for each unit. The regulation is currently under revision and is expected to be published during the second quarter of FY91. The following significant changes are included in the revision:

- Simplification of the quarterly obligation report;
- Increased delegation of authority for MACOM approval from \$25,000 to \$50,000 O&M per GFOQ each fiscal year, provided the congressional maintenance and repair limitation of \$25,000 is not exceeded; and
- Increased MACOM/Installation authority to provide and replace amenities.

### **CRITICAL ISSUES:**

Congressional interest continues to focus on the management of GFOQs. Congressional oversight has increased awareness of the cost of doing business and encourages application of the "prudent landlord concept." With fewer financial resources in the 1990s, careful management is becoming increasingly important. Many of the GFOQs are historic buildings, presenting a part of our national heritage; as such, they should be maintained and preserved for future generations. Careful planning will ensure that maintenance and repair are done when needed.

#### TIPS:

- As soon as possible after the arrival of a general officer, set up a briefing with the new occupant. This briefing should cover reporting requirements, congressional funding limitations, programmed work, and long-range plans for the quarters.
- Encourage occupant involvement in the management of GFOQs.
- Remember that good record keeping is a key to timely and prudent programming of major component replacements, as well as cyclic maintenance.

PROPOSER OFFICE: Army Housing Office (CEHSC-HM-O)

POC NAME: Birgitt Seymour

POC TELEPHONE #: CIV (703) 355-7514, MIL AV 345-7514

### **SUBJECT: Unaccompanied Personnel Housing (UPH) Management**

POLICY: AR 210-50, Installation Housing Management (24 Apr 90).

#### GUIDANCE:

The new regulation includes the policy guidance and procedures for the prudent management of UPH. The DEH must become familiar with the regulation and ensure compliance in the installation engineering and housing operation.

#### CRITICAL ISSUES:

The following areas of UPH management are critical and require DEH interest and/or involvement:

- Close coordination with troop commanders to ensure (1) adequate maintenance and repair of UPH facilities with current programs for recurring maintenance and repair, (2) full use of troop housing with limited use of unit integrity, to ensure that all unaccompanied soldiers have adequate housing, and (3) furniture and furnishings are in sufficient quantities and good condition and that replacement programs are budgeted in the H account.
- Maintenance of accurate and current UPH real property records.
- UPH conversion and diversion actions follow policies and are properly documented.
- The UPH H account is adequately funded in the OMA budget.
- Programs for UPH new construction and modernization are sound, are supported by valid requirements, and are realistic.

#### TIPS:

- Encourage (require) close coordination among the housing manager or UPH manager and the troop commanders.
- Visit UPH facilities regularly to ascertain their proper use and condition.
- Give the unaccompanied soldier the same priority as given the accompanied soldier.
- Ensure UPH standard design packages are used.
- Keep the Commander informed on UPH matters.
- See the Lessons Learned section, Subjects: Troop Housing; and AAA Review of UPH.

PROPOSER OFFICE: Army Housing Office (CEHSC-HM-A)

POC NAME: Ted Lipham

POC TELEPHONE #: CIV (703) 355-7505, MIL AV 345-7505

### **SUBJECT: Transient Housing Management**

POLICY: AR 210-50, 24 Apr 90, MWR Regulation Issue 5, 4 Nov 88

#### GUIDANCE:

- Define and implement assignment procedures to maximize use of facilities.
- Compute sufficient service charges to cover operation maintenance, and improvement costs where appropriated funds support is not authorized.
- Emphasize providing prompt, efficient, and courteous customer service. Implement internal control system to ensure adequate controls exist to help prevent fraud, waste, mismanagement, and misappropriation.
- Establish specific guidance on the types and quality of furnishings appropriate for transient quarters.

#### CRITICAL ISSUES:

Service charges must comply with regulatory guidance and cannot exceed established operation costs and needed improvements. Amenities and furnishings should be comfortable and convenient, but not extravagant.

#### TIPS:

- Plan to stay in the transient facilities for one night to get a customer's perspective of the operation.
- Establish strict funds control procedures. Transient funds must be used to support only transient facilities.
- Establish a rapport with Directorate of Personnel & Community Activities (DPCA) to ensure billeting funds are kept separate from morale, recreation, and welfare funds.

- Establish service charges in accordance with AR 210-50 and review regularly.
- See the Lessons Learned section, Subject: Transient Housing Service Charges.

PROPOSER OFFICE: Army Housing Office (CEHSC-HM-A)

POC NAME: Sherri O'Keefe

POC TELEPHONE #: CIV (703) 355-7509, MIL AV 345-7509

## **SUBJECT: Furnishings Management**

### **POLICY:**

- AR 210-50, Installations Housing Management, dated 24 Apr 90
- AR 210-13, Installations General and Flag Officers' Quarters (GFOQ)
- Installation Commander's Quarters (ICQ) Management dated 30 Oct 86
- Common Table of Allowances (CTA) 50-909 Field and Garrison Furnishings and Equipment, dated 1 Jun 89

### **GUIDANCE:**

The provision of housing furnishings and equipment varies widely between the continental United States (CONUS) and outside the continental United States (OCONUS).

### **CONUS**

In CONUS, Army does not authorize family housing furnishings or household equipment items, except for kitchen appliances (cooking range and refrigerator). Other exceptions to this rule are as follows:

- Family housing furnishings, including carpet and drapes, are authorized in entertainment areas of quarters for installation Commanders in the grade of colonel and general officers.
- General officers in special command positions are also authorized linen, silverware, crystal, washers, dryers, and other special items.
- Certain command sergeants major are authorized carpet, drapes, and upgraded kitchen appliances.
- Excess serviceable furnishings may be offered to lower grade soldiers.

### **OCONUS**

OCONUS, family housing furniture support varies from full furniture support to a limited support, depending on economic feasibility for the provision of furnishings for the particular area. Through limited support, soldiers receive household appliances, washers, dryers, wardrobes, and

kitchen cabinets. Loaner furnishings are provided to soldiers pending receipt of their household goods. Authorizations provided in CONUS also apply in OCONUS. Army authorizes furniture support in private housing to unaccompanied soldiers in the grade of E-7 or above. Other unaccompanied soldiers may receive furniture support if government-controlled facilities are not available.

### **CRITICAL ISSUES:**

The accountability system of housing furniture and equipment distribution often is inadequate. GAO and Army Audit Agency have reported unsatisfactory findings in many cases. However, automation will increase control and improve services.

There is currently little guidance for operating a customer service section or a warehouse. Housing furnishings procedures are scattered throughout a number of documents and are difficult to find. An Army furnishings pamphlet will soon be available to address these issues.

Commanders have had little flexibility in selecting particular furnishings in their facilities. Some furniture items, although they have met government specifications, are not durable. Army has established new standards, changed specifications to improve the quality of furnishings, and changed policy to allow commanders more flexibility in selecting their furnishings.

A high turnover of furnishings personnel increases the need for training. A housing furnishings course is currently being developed to satisfy this need.

Army has established new facility standards to improve the quality of unaccompanied personnel housing, which will affect training and morale and will contribute to a quality force. Furnishings for the new designs will be centrally funded and procured as part of the new construction and modernization.

### **TIPS:**

- Maintain tight control of property accountability system. Whether it is manual or automated, this is essential to an efficient furnishings program.
- Inspect furniture and equipment when they are delivered to be sure products arrive in good condition and when they are returned to the warehouse for reissue to ascertain their condition and to determine that they are the same items that were issued initially.
- Be familiar with procedures for developing annual and long-range plans for repairing and replacing furnishings, budgeting, and coordinating requirements with installation activities.

PROPOSER OFFICE: CEHSC, Army Housing Office:  
CEHSC-HM-A

POC NAME: Ted Lipham

POC TELEPHONE #: CIV (703) 355-7505, MIL AV 345-7505

### **SUBJECT: Housing Operations Management System (HOMES)**

POLICY: AR 210-50, Installation Housing Management  
(24 Apr 90)

#### **GUIDANCE:**

HOMES was developed to improve the quality and range of housing services to soldiers and their families; to improve the quality of Army life and help retain valuable Army personnel; to support housing management personnel at all levels in delivering services quickly and efficiently, and in providing more comprehensive and innovative services; and to generate substantial cost savings.

#### **CRITICAL ISSUES:**

The Army must do more with less. Enhanced, up-to-date housing information handling, operations, and resource management capabilities are needed to achieve substantial budget savings and cost avoidances while maintaining adequate operations. HOMES can achieve these objectives and help to ensure the following:

- Quarters downtime is managed properly so that incoming soldiers and families do not have a long wait for adequate housing.
- Incoming soldiers do not have long waits in housing offices to process applications.
- Incoming unaccompanied personnel are not issued statements of nonavailability and funds for off-post housing, when barracks or transient quarters are or could be made available on post.
- Housing personnel can track the availability of family housing units quickly and accurately following termination of occupancy, reducing unnecessary quarters downtime and better serving soldiers and their families.

#### **TIPS:**

- Ensure that housing personnel are thoroughly trained and encouraged to use HOMES and its capabilities. Following the implementation of HOMES, the Army has saved \$63.4 million and has avoided even greater expenditures.
- Use HOMES to track and report family quarters occupancy and transient quarters availability.

- Use HOMES to improve the performance of housing management and operations at all levels.
- See the Lessons Learned section, Subject: HOMES.

PROPOSER OFFICE: Army Housing Office (CEHSC-HS)

POC NAME: Jack Hinman

POC TELEPHONE #: CIV (703) 355-7528, MIL AV 345-7528

### **SUBJECT: Family Housing Utilization and Occupancy**

POLICY: AR 210-50, 24 Apr 90

#### **GUIDANCE:**

The Army's goal for each installation is a net vacancy rate of 1 percent for adequate dwelling units (DUs), while the maximum acceptable rate is 2 percent (net). No vacancy rate is set for substandard DUs because occupancy is voluntary. Installations with vacancy rates above 5 percent are required to determine if excess family housing exists on the installation.

#### **CRITICAL ISSUES:**

Adequate housing will be assigned with the least delay to ensure maximum occupancy. No unit will be kept vacant when ready for occupancy unless the installation Commander determines an exception is required for key and essential personnel and students.

#### **TIPS:**

- Emphasize maintaining maximum utilization.
- Track and analyze downtime between occupancies to identify and correct avoidable delays in the assignment and termination process.
- Use an automated system that provides an effective means for tracking the dates of pre-termination and termination inspections, in-house and contracted maintenance, maintenance start and completion, and new occupant assignment.
- Identify weaknesses in the assignment and termination process and develop ways to reduce the amount of time units remain vacant.
- Develop a continuous long-range housing turnover plan.
- Establish a self-help program to perform basic minor maintenance and repair and improve the housing quality.
- Maintain waiting lists by grade and number of bedrooms needed.
- Project availability dates of units and notify tenants promptly so they have enough time to vacate private sector housing and can make arrangements for transportation and delivery of their household goods.



- Incorporate maintenance and repair time frames into all maintenance contracts.
- Incorporate liquidated damage clauses into maintenance contracts and take action to recover costs of additional housing allowances when maintenance is not completed on time.
- See the Lessons Learned section, Subject: Delays in the Assignments and Termination Process.

PROPOSER OFFICE: Army Housing Office (CEHSC-HS-S)

POC NAME: Marlene Naranjit

POC TELEPHONE #: CIV (703) 355-7538, MIL AV 345-7538

## **SUBJECT: Family Housing Revitalization**

POLICY: AR 210-50, Installation Housing Management, 24 Apr 90

### **GUIDANCE:**

The Army has established a comprehensive program of whole-house and neighborhood revitalization for family housing to provide a systematic approach to improving housing to current standards and accomplishing deferred maintenance and repair (DMAR). This revitalization initiative considers safety, habitability, durability, functional requirements, and energy efficiency, while concurrently improving neighborhood amenities and support facilities. If, on the basis of a life-cycle analysis, revitalization is not determined to be the best alternative, then replacement housing will be considered. To establish a uniform method in determining funding requirements, the Army is furnishing a housing assessment guide for use in preparing project submittals.

### **CRITICAL ISSUES:**

The total funding necessary to upgrade existing family housing to current construction standards must be established. The revitalization program was developed by using HQDA-prepared assessment procedures. The results of this action will be used to initiate detailed studies of housing areas and project submissions. The Army plans to develop a Ten-Year Funding Plan (FY92-02) to accomplish the backlog of work identified. The installation and MACOM input plans will identify, estimate, validate, and prioritize this extensive program. Revitalization documents provide an inventory of quarters requiring revitalization and give preliminary funding estimates in accordance with the Army Family Housing Guide, and DD Form 1391 project documentation must be prepared.

### **TIPS:**

- Use the Army Family Housing Guide to assess, inspect, and document work required for the entire housing area.
- Ensure the inventory and survey is complete using housing office and maintenance shop knowledge and records.
- Ensure that project documents (DD Form 1391s) will correct any housing deficiencies identified.
- Ensure the completed project demonstrates prudent investment.

PROPOSER OFFICE: Army Housing Office (CEHSC-HM-O)

POC NAME: Kevin McCulla

POC TELEPHONE #: CIV (703) 355-7516, MIL AV 345-7516

## **SUBJECT: Family Housing Congressional Reporting Thresholds**

### **POLICY:**

- MILCON Authorization and Appropriation Acts
- AR 210-50, Installation Housing Management, 24 Apr 90
- AR 210-13, Installation General and Flag Officer's Quarters (GFOQ) and Installation Commander's Quarters (ICQ) Management, 30 Oct 86

### **GUIDANCE:**

Exceeding cited funding thresholds requires congressional notification and/or approval. The funding thresholds contained in referenced regulations have been established by the congressional committees to maintain congressional program oversight and control in critical management areas.

### **CRITICAL ISSUES:**

#### **Family housing improvement threshold (statutory)**

The statutory limit for improvements, including concurrent maintenance and repair, is \$40,000 per dwelling unit (DU) as adjusted by the area construction cost index (ACCI) for the location involved at the time of contract award. The statutory limit is \$60,000 per DU, as adjusted by the ACCI, for improvements to accommodate the handicapped. A statutory waiver is required to exceed these thresholds.

#### **Improvements to overseas family housing units (administrative)**

The Appropriations Committees' threshold on improvements to overseas units is \$35,000 (absolute limit; not subject to ACCI adjustment). If improvements scheduled for a specific DU exceed \$35,000 over 3 years, total funding should be requested in 1 year. The

justification should identify all improvements and major maintenance work that has been done over the past 3 years, as well as that planned for the following 3 years. Normal notification is through the budget submit. Out-of-cycle requests require Congressional notification (through the Office of the Assistant Secretary of the Army (I,L&E) and a 21-day waiting period.

**GFOQ maintenance and repairs (administrative).**

Obligations for all maintenance and repair (excluding operations) on each GFOQ are limited to \$25,000 per fiscal year unless specifically included in the budget justification. Normal notification is through the budget submit. Out-of-cycle requests require prior Congressional approval (comes through Secretary of the Army). GFOQ operations and maintenance costs of more than \$50 per fiscal year require OASA approval.

**Maintenance and repair projects, Non-GFOQ (administrative).**

Obligations for all major maintenance and repair (including incidental improvements) for non-GFOQs are limited to \$15,000 per DU per fiscal year. Congressional approval is required to exceed this limitation. Normal notification is through budget submit. Out-of-cycle requests require Congressional notification (through OASA(I,L&E)) and a 21-day waiting period.

**TIPS:**

- Develop your plan of work, co-ordinate with user and execute.
- If projects will exceed the funding thresholds, request approval at the time of the annual budget justification.
- Avoid delaying contract award; do not wait until you receive your bids to request approval.
- Keep copies of all approvals in project files.

PROPOSER OFFICE: Army Housing Office (CEHSC-HM)

POC NAME: Alex Houtzager

POC TELEPHONE #: CIV (703) 355-7513, MIL AV 345-7513

**SUBJECT: Historic Family Housing Management**

**POLICY:**

- National Historic Preservation Act of 1966, as amended
- Historic Family Housing Study and Survey—2,009 Dwelling Units
- AR 210-50, Installation Housing Management, 24 Apr 90
- AR 420-40, Historic Preservation, 15 Apr 84
- Secretary of Interior's Standards for Rehabilitation, 1983

**GUIDANCE:**

Family housing facilities that are listed on the national or state register of historic places, are contributing structures within a historic district, or have been determined eligible or are potentially eligible for listing must be maintained in accordance with the stated policy. Stewardship of historically significant facilities imparts a special responsibility to the managing installation and to the occupants. Decisions on use, operations, and maintenance should consider those characteristics that contribute to the quarters' historic significance.

**CRITICAL ISSUES:**

Work that may affect historically significant housing must be coordinated with the applicable state historic preservation office (SHPO). This office is the jurisdictional extension of the advisory council on historic preservation for federal projects. The state office and council reviews focus on the effect of rehabilitation on a historic resource.

The effects are measured against the Secretary of Interior's standards for rehabilitation and are categorized as having impact, adverse impact, or no impact. Impact items are evaluated individually (that is, they may be inherently undesirable, but because of circumstances, are unavoidable). Minimizing impact, of any kind, is the goal. Adverse impact items are serious items that breach the historic fabric. No impact items are of interest, but only peripherally to the historic fabric.

**TIPS:**

- Be sensitive to significant character-defining features when selecting replacement materials.
- As part of the review process, establish a programmatic agreement among the installation, SHPO, and the Advisory Council on Historic Preservation.
- Consider repairing building components, rather than complete replacements.
- Develop contract specifications for the specific project rather than a generalized specification for a group of facilities that may be difficult to administer.
- Repair or alterations affecting historically significant structures normally require an environmental assessment in accordance with ar200-2.

PROPOSER OFFICE: Army Housing Office (CEHSC-HM-O)

POC NAME: Alex Houtzager

POC TELEPHONE #: CIV (703) 355-7513, MIL AV 345-7506

## **SUBJECT: Deferred Maintenance and Repair (DMAR)**

**POLICY:** AR 210-50, Installation Housing Management;  
AR 420-16 Facilities Engineering Reports, Command  
Budget Estimate (Schedule 49)

### **GUIDANCE:**

DMAR denotes maintenance and repairs (excluding incidental improvements) that were included in the annual work plan (AWP) but could not be executed because of insufficient funds.

### **CRITICAL ISSUES:**

Unfinanced requirements of maintenance and repair will be recorded as DMAR only if the following conditions are met:

- It is a valid requirement and has been included in the AWP.
- It remains unfinanced in the reported FY.
- It can be accomplished.
- Projects are prioritized by MACOM-developed criteria.
- Where installation DMAR is equal to or greater than 20 percent of its annual maintenance and repair requirements, an on-site visit by a higher headquarters is conducted to validate projects.

### **TIPS:**

- Establish an accurate method for inspecting family housing and be able to validate the requirement.
- Delete from backlog lists those projects that have been completed and buildings that have been scheduled for disposal.
- Update cost estimates for DMAR projects, accounting for inflation, fluctuating exchange rates, and any other important economic factors.
- Record all repair work that must be accomplished, identify need, current working estimate, date, and estimator's name in the project's folder.
- Determine whether the project can be completed; if not, eliminate the project.

**PROPOSER OFFICE:** Army Housing Office (CEHSC-HM-O)

**POC NAME:** Kevin McCulla

**POC TELEPHONE #:** CIV (703) 355-7516, MIL AV 345-7516



**ENVIRONMENTAL  
AND  
NATURAL RESOURCES**





## **SUBJECT: Environmental Compliance Achievement Program (ECAP) Funding**

### **POLICY:**

- AR 200-1
- AR 37-100-XX
- SAFM-BU message, 221503 Sep 89, subject: Environmental Compliance Requirements
- MACOM FY92-97 POM Development Instructions
- AR 420-16

### **GUIDANCE:**

The Army increased the level of visibility of resources programmed, budgeted, and executed for environmental enhancement by creating new environmental program accounts in each major force program. These separate environmental accounts are in operations and maintenance appropriations for Active Army, Reserve, National Guard, research and development, and Army industrial fund activities. AR 37-100-XX contains the account descriptions. Resources for ECAP, previously funded in the real property maintenance activities accounts, were transferred to the new accounts effective FY91.

### **CRITICAL ISSUES:**

Army policy is to ensure compliance with environmental standards. At a minimum, funds must be programmed and budgeted to achieve and maintain compliance. Failure to comply can result in serious legal consequences for Army personnel and can affect missions and operations at Army installations. Preventing and correcting noncompliance requires effective personnel training and assessment of the environmental conditions on the post.

### **TIPS:**

- State and federal regulatory agencies continue to bring enforcement actions at military installations (more than 970 instances of noncompliance occurred in the first 9 months of FY90). The criminal convictions at Aberdeen, Maryland, and investigation at Fort Meade, Maryland, reflect the propensity of regulators to prosecute noncompliance.
- The Army is legally obligated to ensure compliance with environmental standards.
- Make tradeoffs, if necessary, to fund environmental compliance. These tradeoffs may create shortfalls in other programs and should be identified through normal channels.
- See the Lessons Learned section, Subject: Environmental Programs.

**PROPONENT OFFICE:** Office of the Assistant Chief of Engineers, ATTN: DAEN-ZCP-B

**POC NAME:** Michael McCarley

**POC TELEPHONE #:** CIV (202) 695-0089, MIL AV 225-0064

## **SUBJECT: Environmental Compliance Achievement Program (ECAP)**

**POLICY:** AR 200-1, 23 Apr 90

### **GUIDANCE:**

The ECAP prescribes the Army's responsibilities, policies, and procedures for preserving, protecting, and restoring the quality of the environment.

### **CRITICAL ISSUES:**

Environmental quality and enhancement incorporates all applicable statutory and regulatory requirements in the areas of research and development; water resources management; air pollution abatement; hazardous materials management; solid and hazardous waste management; noise abatement; oil and hazardous substances spill contingency planning, control, and emergency response; environmental restoration; asbestos management; radon reduction; and other environmental programs.

### **TIPS:**

- Become familiar with installation Commander's responsibilities described in paragraph 1-25, AR 200-1.

**PROPONENT OFFICE:** Army Environmental Office

**POC NAME:** LTC Jessie B. Cabellon

**POC TELEPHONE #:** CIV (202) 693-5032, MIL AV 223-5032

## **SUBJECT: Environmental Coordinators Handbooks**

**POLICY:** The Senior Environmental Leadership Conferences attendees, the Army Science Board, the DA Inspector General, and the Structured Requirements Analysis Planning group members have all independently published reports asserting that the professional environmental staff at Army installations are not adequately trained to perform their jobs.

### **GUIDANCE:**

The environmental coordinators handbooks (32 booklets) are desktop references that contain technical, institutional, and managerial knowledge needed to manage the environmental program at Army installations. The series includes a description of the responsibilities of the environmental managers and the resources available to accomplish them. Installation environmental managers can use the handbooks to augment their technical background and institutional knowledge in areas in which they have little or no experience and to introduce new personnel to the responsibilities and functions of the office.

#### CRITICAL ISSUES:

Each Army installation has an environmental management team that is responsible for ensuring installation compliance with all federal, state, and local environmental regulations. At many installations, the environmental management staff may comprise only a few personnel who must stay current with many regulatory requirements. Other installations may have particular environmental areas of concern that require state-of-the-art knowledge.

Nearly 50 percent of personnel have fewer than 3 years' experience. The environmental coordinators handbooks help new personnel, or current personnel with new environmental assignments, until they can be formally trained.

#### TIPS:

- Keep a complete set of handbooks on hand at all times.
- Supplement the handbooks with state and local regulations, installation policy, and major environmental issues for a particular installation.
- Do not substitute the handbooks for formal training—they are intended only for initial guidance prior to formal training or as a supplement following training.

PROPOSER OFFICE: Assistant Chief of Engineers

POC NAME: Matthew Andrews, CETHA-EC-S

POC TELEPHONE #: CIV (301) 671-4714, MIL AV 584-4714

#### **SUBJECT: Pollution Prevention, Control and Abatement Report RCS #1383 (OMB A-106) Report**

#### POLICY:

- Executive Order 12088
- OMB Circular A-106
- OMB Circular A-11
- AR 200-1
- AR 200-2

#### GUIDANCE:

In compliance with EO 12088 the Army will identify all requirements in order to achieve and maintain compliance with all applicable Federal, state, local and host nation environmental laws and regulations, and applicable agreements.

The requirements are set forth in the Army's annual Pollution Prevention, Control and Abatement Plan called for by EO 12088. The Plan is submitted, through the Administrator of the US Environmental Protection Agency,

to the Director of the President's Office of Management and Budget. The Army's 1383 Report is used to meet the requirement for the annual Pollution Prevention Control and Abatement Plan.

EPA prioritizes the requirements by three classes:

- C1 I - Out of Compliance (Agreements, Audit results & NOV's)
- C1 II - Soon to be Out of Compliance (Deadlines in future)
- C1 III - Leadership & Obsolescence

Army policy is that all Class I projects and that portion of Class II projects, which if not funded in the current budget cycle would cause an installation to be out of compliance before funding could be requested again, and hazardous waste disposal are "MUST FUND" bills.

It is imperative that reports be filled out accurately in order to minimize Commanders' risk of liability due to non-compliance with environmental laws.

Preparation of the report can be accomplished by an automated program.

#### TIPS:

The report is used by HQDA to validate MACOM budget and programming documents. Failure to complete an accurate 1383 could adversely affect a command's budget. Be sure to consider executability in preparing the report.

PROPOSER OFFICE: Army Environmental Office, Environmental Response & Information Center (ERIC)

POC NAME: Mr. Hal Stoneberg

POC TELEPHONE #: CIV (703) 693-4636, MIL AV 223-4636

#### **NATIONAL ENVIRONMENTAL POLICY ACT OF 1969**

#### **\*\*\*IMPLEMENTATION PLAN\*\*\***

June 1990

#### **CURRENT PROGRAM STATUS**

#### GOALS:

- To foster and promote the general welfare.
- To create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

## STATUTES:

The National Environmental Policy Act of 1969 (PL 91-190).

This law pertains to the United States. U.S. activities in foreign nations and the global commons are governed by Executive Order 12114, entitled, **Environmental Effects of Major Federal Actions**.

## GUIDANCE:

AR 200-2  
DODD 6050.1

## POLICIES:

The Army will:

- Ensure the wise use of natural resources on Army land by matching military mission requirements with the ecological compatibility of the land and natural resources.
- Integrate environmental considerations into the decisionmaking process.
- Recognize worldwide and long-range environmental problems, and, where consistent with national security and foreign policy, support programs to protect the quality of the world environment.

## PROGRAM CONCEPTS:

The NEPA process is not a program; it is a management process required by law and regulation. More specifically, it is a planning and controlling methodology for implementing other programs, and consists of:

- Public participation
- Interdisciplinary study
- Full disclosure
- Due consideration of all significant environmental impacts of major federal actions.

## PROGRAM MANAGEMENT:

The responsibility for satisfying the procedural requirements of NEPA rests with the project proponent. Determining proponentcy can be complicated. Actions frequently cut across MACOMs, involve several installations, or are foisted upon the Army by another entity (DOD) and willing proponents may not exist. Occasionally, the Army office tasked with an analysis and preparation of an environmental document is the potential loser in the decision (for example, base closure). This is not generally a significant consideration, as all federal agencies are, ultimately, the primary proponents and critics of their own actions. A certain conflict-of-interest is an integral part of the NEPA process.

The Army Environmental Office is the HQDA proponent for NEPA and is responsible for developing implementing guidance.

## STRENGTHS AND WEAKNESSES:

The spirit of NEPA and the utility of the NEPA process are often diluted by:

- Premature political considerations.
- Over-optimistic expectations of what an environmental analysis can and should do at a single time.
- General misunderstanding of the role of NEPA vis-a-vis other environmental statutes and processes.
- Difficulties monitoring the implementation of plans and their individual components. Often, this involves tracking a plan through the protracted and tortuous federal budgeting process.
- Lack of long-term continuity in programs and projects due to personnel turnover.
- Having to react too quickly to budget reductions, force structure changes, and base closures in response to changing threats.
- Army decisionmakers, and even staff, are not intimately involved in the NEPA process. Typically, the environmental analyses and documents of large projects are contracted to private firms through a USACE district and division; the resulting bureaucracy dilutes the critical thought necessary for good understanding of the issues and impacts.

## TRENDS

The scope of environmental concerns will become more global. The global commons, impacts to and by foreign countries, and international issues such as population growth, global warming, and acid rain will receive more interest from governments and national environmental organizations than the local, direct impacts of projects. Individual projects will still have to battle local interests and the not-in-my-backyard mentality, but these tend to be driven more by social pressures than significant environmental impacts. Litigation over environmental procedures and decisions will become prohibitively expensive. Emphasis will be on conflict resolution, and strengthening public and private sector advocacy for a project. Meaningful public involvement will be increasingly important, and yet more difficult to acquire as issues involve high technology and complex natural and social systems.

## FUTURE PROGRAM

The following should be initiated or continued in order to better manage projects and programs through environmental planning:

### User Products:

- Revise AR 200-2 to update the list of categorical exclusion in Appendix A. AEO.

- Include NEPA requirements in program ARs such as master planning, training ranges, acquisition, etc. AEO and Proponent.
- Prepare a guidance memorandum that critiques recent NEPA efforts. AEO.

#### Management:

- Encourage decisionmakers to be more directly involved in the management of the NEPA process; reduce layers of preparation and review by more in-house analysis and documentation. AEO through guidance memorandum.
- Track plan implementation and monitor important environmental components to ensure the goals and objectives of the plan are being met. USATHAMA.

### **SUBJECT: Defense Environmental Restoration Program**

POLICY: AR 200-1, Chapter 9, 23 Apr 90

#### GUIDANCE:

The Defense Environmental Restoration Program is responsible for cleaning up contamination that has resulted from past practices at Army (and other DOD) installations, at both active and formerly used defense sites.

#### CRITICAL ISSUES:

- Army's program for complying with the requirements of the Comprehensive Environmental Compensation and Liability Act (CERCLA), commonly referred to as the Superfund Act as amended by the Superfund Amendments and Reauthorization Act (SARA).
- Funding (known as the Defense Environmental Restoration Account (DERA)) is "fenced" at DOD and managed by the Assistant Chief of Engineers for the Army.
- Requirements should be identified to MACOM for inclusion in budget.
- Existence of off-site contamination must be reported to MACOMs and regulators.
- Public participation is required in the cleanup process.

#### TIPS:

- Cooperate and work with the regulators and public to make the process go more smoothly.
- Inform the MACOM of any old disposal sites that may be discovered.

PROPOSER OFFICE: Army Environmental Office

POC NAME: MAJ Richard Kussman

POC TELEPHONE #: CIV (202) 693-5032, MIL AV 223-5032

### **SUBJECT: Base Realignment and Closure (BRAC) Environmental Issues**

#### POLICY:

- AR 200-1
- AR 200-2
- Memo, CEEC-P, 3 Mar 89, subject: Environmental Survey Guidance for Potential Construction Sites

#### GUIDANCE:

The MACOM has been designated as the lead for preparing environmental analyses (environmental impact statements (EISs) or environmental assessments (EAs)) for both BRAC I and II. Funds for analyses preparation are being centrally managed and distributed by HQUSACE. In most instances, the Corps of Engineers military support district prepares the analyses for closing, rather than the "gaining" installation. A few EAs have been written in-house by the installation staff. Future realignments and closures will probably continue to be prepared in the same manner.

The U.S. Army Toxic and Hazardous Material Agency (USATHAMA), which is a field operating activity of the Corps of Engineers, oversees environmental cleanup or restoration. USATHAMA accomplishes the studies needed for the restoration and prepares and signs the statement of condition when the restoration is complete. Design and construction will usually be the responsibility of the nearest district with the expertise to accomplish or supervise the restoration. Funding for restoration will be managed in the same way as the EA and EIS money. ONLY CLOSING INSTALLATIONS ARE INCLUDED IN THE BRAC RESTORATION PROGRAM. The idea is that installations that remain open will continue to be funded either from OMA or the Defense Environmental Restoration Account based on the worst-first policy.

#### CRITICAL ISSUES:

The installation DEH involved in BRAC actions is primarily responsible for providing accurate installation data to the MACOM and/or the district preparing the EA or EIS or to the contractor working for USATHAMA.

#### TIPS:

- Continue to program for "contaminated construction site surveys" (see memo cited above), cultural resources surveys, and other construction site-related surveys to ensure the groundwork has been laid for any environmental analysis. With this preparation, construction needed for realignments can occur soon after the environmental analyses are completed.

PROPOSER OFFICE: DAEN-ZCI-A (BRACO)

POC NAME: Stephen P. Miller

POC TELEPHONE #: CIV (202) 693-5039, MIL AV 223-5039



## **SUBJECT: Endangered Species Management on Army Lands**

### **POLICY:**

- The Endangered Species Act (ESA) of 1973, PL 100-478 requires all federal departments and agencies to carry out programs to conserve endangered and threatened species.
- Citations from AR 420-74, Feb 86 (6-2)
- AR 200-2, Dec 88
- Technical Note 420-74-2, Nov 89

### **GUIDANCE:**

The Army, with the assistance of the Secretaries of the Interior and Commerce, must ensure that its actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species. The Army is authorized to use its resources to carry out a management program.

### **CRITICAL ISSUES:**

Because land is a scarce commodity, it is increasingly difficult for the Army to meet its real training needs within the limits of existing land holdings. Endangered species add but one more limitation to the use of those lands. Although federal agencies are allowed some discretion in meeting Section 7 requirements under ESA, courts may direct agencies to undertake specific management action on lands under their control. The Army can determine its own fate with regard to endangered species management by preparing realistic conservation plans.

Statute 16 USC SS 1536(a)(1) (ESA): "All...Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species...."

### **Consultation:**

- Statute 16 USC SS 1536(a)(2): "Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any [agency] action authorized, funded, or carried out by such agency...is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species... In fulfilling the requirement of this paragraph each agency shall use the best scientific and commercial data available."

- Statute 16 USC SS 1536(d): "After initiation of consultation required under subsection (a)(2) of this section, the Federal agency and the permit or license applicant shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2) of this section."

### **Civil Penalties**

- A \$25,000 fine per violation, for any person who knowingly violates the ESA or any permit or certificate, or any regulation written to implement prohibited actions defined under the ESA as "taking" endangered species or their habitat.
- A \$12,000 fine per violation, for any person who knowingly violates any other regulation issued under the ESA.
- A \$500 fine per violation, for any person who otherwise violates ESA or regulation, permit, or certificate.

### **Criminal Fines and Penalties**

- A \$50,000 fine and/or 1 year in prison, per violation, upon conviction of any person who knowingly violates the ESA or any permit or certificate, or any regulation written to implement prohibited actions defined under the ESA as "taking" endangered species or their habitat.
- A \$25,000 fine and/or 6 months' imprisonment, per violation, upon conviction of any person who knowingly violates other ESA regulations.

### **TIPS:**

- Determine which species are likely to occur on specific installations.
- Use that information to set priorities for installation-specific inventories and management actions.
- Alert commanders and planners of the potential for future endangered species problems.
- Remember that gathering endangered species information for its lands puts the Army in a good position to deal effectively with the demands placed on it by proponents of endangered species conservation.
- Identify endangered species habitat in the installation master plan.
- Actions affecting endangered species and their habitat may require environmental documentation in accordance with AR 200-2

PROPOSER OFFICE: CEHSC-FN

POC NAME: Larry Adams

POC TELEPHONE #: CIV (703) 355-7969

## **SUBJECT: Historic Property Management**

**POLICY:** AR 420-40, 15 Apr 84

### **GUIDANCE:**

All actions at the installation that may affect historic and archeological properties must be reviewed with the state historic preservation officer (SHPO) and, in most cases, with the advisory council on historic preservation.

Failure to go through this legally required review process places the action (construction, repair, maintenance, tactical training, timber sale, or other building or ground-disturbing activity) in jeopardy of being slowed, altered, or halted. At the completion of the review process, the Army can decide how to manage the historic or archeological property.

### **CRITICAL ISSUES:**

The Army takes pride in the historic places on its installations. Identify the historic and archeological properties, and protect these properties to the maximum extent possible. This is mandated by the National Historic Preservation Act of 1966.

Archeological sites must be protected from vandalism, looting, and removal of materials that are important parts of historic cultures. Removing archeological material, without a permit from the district engineer, is illegal under the Archaeological Resources Protection Act of 1979.

### **TIPS:**

- Identify an installation historic preservation officer (usually in the environmental office).
- Charge the installation historic preservation officer with reviewing all actions that may affect historic and archeological places in the cantonment and on the ranges, and recreational and leased areas.
- Allow sufficient time and resources to do the job. The less information available about the significance of the historic properties or the potential impact of an action or mission, the longer the review process will take with the SHPO and the advisory council.
- Work closely with the MACOM historic preservation officer who has the technical expertise to assist you.
- Ensure documentation meets AR 200-2 requirements.

**PROPOSER OFFICE:** CEHSC-FN

**POC NAME:** Constance W. Ramirez

**POC TELEPHONE #:** CIV (703) 355-7970, MIL AV 345-7970

## **SUBJECT: Training Land Management**

### **POLICY:**

- AR 420-74, Natural Resources Management: Land, Forest, Fish & Wildlife
- TC 25-1, Training Land

### **GUIDANCE:**

When determining the amount of land required to conduct mission activities, doctrinal requirements for executing mission objectives and the capacity of the natural resources to sustain mission objectives must be considered.

### **CRITICAL ISSUES:**

If sufficient land is not available for conducting mission activities, the training experience will be inadequate and the natural resource base will degrade resulting in noncompliance and litigation.

### **TIPS:**

- Inventory all training lands to determine the distribution and extent of sensitive lands (endangered species, wetlands, and archaeological sites), fragile lands (highly erodible soils), and durable lands (high-carrying capacity).
- See the Lessons Learned section, Subject: EISs, Land Acquisition, Law Suits.

**PROPOSER OFFICE:** CEHSC-FN

**POC NAME:** Victor E. Diersing, Agronomist

**POC TELEPHONE #:** CIV (217) 355-7968, MIL AV 345-7965

## **SUBJECT: Pest Management Program**

**POLICY:** AR 420-76, Pest Management, 3 Jun 86

### **GUIDANCE:**

Properly administered pest management operations present minimal risk of environmental contamination. However, the nature of pest management often requires the storage and use of pesticides that require careful selection, handling, and application so as to meet safety and environmental guidelines. Pesticide use should be the last approach to pest problems. Integrated pest management (IPM) and the use of several pest-management techniques, can reduce the amount of pesticides being applied to the environment or in facilities, while giving excellent long-term control of pests.

## CRITICAL ISSUES:

Pesticide storage and mixing facilities must be designed, maintained, and operated in a manner that reduces the risk of environmental contamination with pesticides and of worker exposure to these materials. Such features as containment curbs, drains, back-flow prevention, and ventilation are critical to safe facilities and are addressed in Armed Forces Pest Management Board Technical Information Memorandum No. 17, Pest Control Facilities.

To reduce contamination from pesticide use and achieve effective long-term pest control, other activities must support pest management efforts. Pest management personnel often give the following recommendations to control pests. Sanitize kitchens and dining facilities to reduce cockroach problems, install screens on doors and windows to keep out flying insects, establish proper grading around buildings and use pressure-treated wood to reduce termite damage, and eliminate stagnant waters to reduce mosquito problems. Remember, however, that these actions often are the responsibility of other functional elements. The DEH must establish a policy in which job orders that will preclude pesticide use are performed as part of the installation's commitment to IPM.

## TIPS:

- Ensure that personnel are properly trained and certified.
- Ensure that the pesticide-mixing facilities meet environmental, safety, and fire prevention criteria.
- Ensure that the installation pest management plan is up to date and includes nonchemical approaches to pest management.
- Ensure that pest management efforts and pesticide use including self-help-issued items, are accurately reported on the Pest Management Report, DD Form 1532.
- Do not permit personnel to apply pesticides when a cost-effective nonchemical approach is available.
- Do not permit routine pesticide applications without surveillance data.
- See the Lessons Learned section, Subject: Pest Control
- Ensure documentation meets AR 200-2 requirements.

PROPOSER OFFICE: CEHSC-FN

POC NAME: Raul Marroquin, or MACOM Pest Management Consultant

POC TELEPHONE #: CIV (703) 355-7968, MIL AV 345-7968

## SUBJECT: Environmental Compliance Assessments (ECA)

### POLICY:

- AR 200-1, 23 Apr 90
- Memorandum, DASD(IN) 17 Jan 85, Subject: Environmental Audits of DOD Facilities
- Letter, CEHSC-E, 20 Jan 88, Subject: Army Environmental Program

### GUIDANCE:

All Army installations are required to perform an external ECA every 4 years, and at the mid-point of the 4-year cycle, the installation is required to perform an internal assessment.

A standardized protocol must be used for both the internal and external ECAs.

Audit findings will eventually be tracked through an automated reporting system that inputs into the Army Automated Environmental Management Information System (AAEMIS).

### CRITICAL ISSUES:

- Installations must develop a corrective action plan for noted deficiencies.
- Funding requirements must be identified in the RCS 1383 report.
- Installations are not currently doing internal audits consistently, thereby missing the opportunity to obtain command visibility.

### TIPS:

- Remember that internal audits can be conducted by contractors with DEH staff or internal review personnel oversight.
- U.S. Army Toxic and Hazardous Material Agency (USATHAMA) can guide and assist in preparing for and conducting internal ECAs.

PROPOSER OFFICE: USATHAMA, Environmental Compliance Division

POC NAME: Charles Shaheen and Phil Huber

POC TELEPHONE #: CIV (501) 671-4714, MIL AV 584-4714



**USACE  
AND  
DEH SUPPORT**





## **SUBJECT: USACE Installation Support Program**

### **POLICY:**

- AR 420-10, 2 Jul 87 (Chapter 6 and Appendices E & F)
- AR 10-87, 11 Mar 88, MACOM Missions and Functions.
- Architectural and Engineering Instructions (AEI), dated 22 Jan 90, "Simplified Design Methods."

### **GUIDANCE:**

USACE's primary mission is to support Army installations through a combination of direct-support and general-support districts. Each direct-support district obtains some central funding through Corps channels to allow a minimum amount of nonreimbursable services. However, most installation support services must be purchased from (reimbursed to) the district when needed by the installation.

This reimbursement is required because districts are not bulk funded as are DEHs. The cost of district manpower, equipment, and travel must be recouped through a fee that is applied against the various projects (military construction (MILCON), non-MILCON, and civil works). Many services can be obtained from a direct support district because the district is able to access the rest of the Corps or contract for the required support. Some typical services include planning, engineering, environmental, and economic analyses and studies; project design and contracting support; construction and contract management; architect/engineer (AE) contracting; real estate services; interior design; environmental clean-up support; project development; and engineering graphics automation support.

### **CRITICAL ISSUES:**

- Most services are reimbursable.
- Installation support services are meant to supplement, not supplant, the installation's internal resources.
- Support services are tailored to fit the installation's needs.
- USACE district military and civilian leadership monitor installation needs and evaluate the adequacy of USACE services.
- Teamwork, planning, communication, and mutual understanding and respect are needed for a successful installation district support relationship.

### **TIPS:**

- Review the supporting district's installation support guidebook and handbook to become familiar with Corps policies, procedures, and capabilities.
- Take time to learn the district's typical lead times for potential projects. Plan and allocate time and resources accordingly.

- To minimize administrative overhead expenses, package small jobs when economical and feasible.
- Remember that work definition, work classification and approval, and project funding are installation responsibilities.
- Become familiar with Corps organizations, policies, procedures, and people; encourage and assist your district to do the same with your installation operations.
- Be sure adequate procedures are in place to monitor and transfer operations and maintenance funds in a timely manner.
- Encourage the installation engineering staff to participate in appropriate district forums such as AE selection boards, installation support conferences, and technical reviews.
- Review project turnover procedures to improve their effectiveness and efficiency.
- Get periodic updates on the latest changes and issues in the areas of district planning, engineering, construction, legal, real estate, and safety.
- Ensure that the district area and resident engineer staff maintain close contact with the DEH engineering, plans, and services staff.
- Become familiar with the installation support policies outlined in AR 420-10; also, acquire a working knowledge of key district policies and procedures.
- See the Lessons Learned section, Subject: USACE Installation Support.

PROPOSER OFFICE: CEMP-CI

POC TELEPHONE #: CIV (202) 504-4804

## **SUBJECT: Military Construction (MILCON) Cost Estimates**

POLICY: AR 415-15, 1 Jan 84

### **GUIDANCE:**

The DD Form 1391 for each MILCON project, with special requirements paragraphs, forms the budgetary foundation, scoping limit, and basis for justification to the Congress. The Secretariat, the Office of Management and Budget, and Congress review the cost estimates. Along with project scope, cost data are fixed long before project design begins and cannot be changed without congressional approval. Most of the cost information needed is available within the 1391 processor system. The electronic data entered in the 1391 processor system should be modified by Engineering Improvement Recommendation System (EIRS) bulletins that provide the latest cost information. The supporting USACE division or district should verify cost estimates (preferably during 1391 preparation) before installations submit them to their MACOM for review and approval.

#### CRITICAL ISSUES:

Because cost data are used to set the program limit for MILCON projects, they must be correct and are worth an extra effort when the project is initiated. It is easier to obtain cost data now than it was when 1391s were prepared manually. With electronic data readily available, accurate cost estimates on DD Form 1391 are easier to achieve.

#### TIPS:

- If in doubt on cost, have your supporting USACE division or district check it for you.
- Do not use "Lump Sum" quotes in primary and support facilities or identify the scope in the description.
- Identify the scope or building numbers when defining the project; the statement, "Repair or upgrade to miscellaneous buildings," is not enough.
- Be sure supporting facilities are properly identified and do not exceed 20 percent of primary facilities without proper justification.
- Do not justify a higher cost by stating that the primary facility cost is very low.
- Use the units of measure specified in AR 415-28.
- Do not include equipment-in-place in your estimates (such as lab equipment, compressors, and microscopes).
- Do not show labor costs as a separate item in the primary facility.

See the Lessons Learned section, Subject: MILCON Scoping, Programming, and Cost Estimating.

PROPONENT OFFICE: CEMP-ES

POC TELEPHONE #: CIV (202) 272-1131, MIL AV 285-1131

#### **SUBJECT: Military Construction, Army (MCA) Programming Documents**

POLICY: AR 415-15, 1 Jan 84

#### GUIDANCE:

The DD Form 1391 for each military construction (MILCON) project, with special requirements paragraphs, forms its budgetary foundation, scoping limit, and basis for justification to the Congress. The 1391 should be based on detailed coordination with the prospective facility occupant to develop functional requirements. Functional requirements and user coordination are shown in the project development brochure (PDB). DD Forms 1391 should be prepared so that they can be easily understood by someone with no Army or MILCON background. Costs and scope must be carefully calculated before the document is finalized, on the basis of the PDB. Cost data

should be checked by the supporting USACE division or district. Badly needed projects may be deferred or canceled because of poorly prepared 1391s. After approval by MACOMs, PDBs are sent to the supporting district for use in preliminary design.

#### CRITICAL ISSUES:

Poorly prepared DD Forms 1391 can delay technical review, require rewriting, and often cause otherwise good projects to be canceled or deferred. The Engineering Division, Directorate of Military Programs, and the Construction Requirements Review Committee (CRRC) review and validate the 1391 carefully and issue Code 1 or 2 only if satisfied that the requirement is justified and technically correct and that the DD Form 1391 will withstand the scrutiny of the Assistant Secretary of the Army and Congressional committees.

The problem of poor quality documentation is compounded by late submittals. The MACOM should require PDBs for all programmed MILCON projects because USACE divisions and districts need the PDBs to begin design. HQUSACE is currently testing divisional-level technical review of DD Forms 1391 in the South Atlantic Division. If this test is successful, USACE divisions will perform the technical review that is now conducted at HQUSACE. This will save valuable time, enable site inspections, and improve the overall quality of the documents.

#### TIPS:

- Remember that the DD Form 1391 is not a design, but a programming document.
- Do not make construction details too confining.
- Leave design to the architect/engineer or in-house designer.
- Avoid superfluous information.
- Do not create a new form in 1391 processor if you only need to revise the 1391, and do not resubmit DD Forms 1391 with insignificant changes—use PAXmail to request changes.
- Avoid improper cost estimates by using the costing information available on the 1391 processor, along with cost change information provided in Engineering Improvement Recommendation System (EIRS) bulletins.
- If in doubt on cost, have your supporting USACE division or district check it for you.
- See the Lessons Learned section, Subject: MCA Project Development.

PROPONENT OFFICE: CEMP-ES

POC TELEPHONE #: CIV (202) 272-1131, MIL AV 285-1131

## **SUBJECT: Military Construction (MILCON) Design Review Process**

**POLICY:** ER 1110-345-100, dated 14 Dec 73 with four changes, latest of which is 28 Jun 85, Design Policy for Military Construction

### **GUIDANCE:**

- Guidance for the design review process for MILCON projects is provided in ERs and through training.
- The essentials of the Corps design review policies are covered in the above-referenced ER. A new ER, scheduled for completion in Sep 90, will address design quality aspects of the total process, including design review.
- The Military Design Review training course sponsored by HQUSACE and administered by the Huntsville Division provides hands-on experience in accomplishing proper design reviews.

### **CRITICAL ISSUES:**

- Timely, accurate, integrated design reviews involving all customers are the key to this process.
- The total design quality management process will refocus design review on the quality of the design being produced.
- It is essential that the architect/engineer (AE) understand the contractual responsibilities of providing quality work.
- The Corps AE Responsibility Management Program and new improvements in evaluating contract AEs will help obtain better products and services for USACE and its customers.
- The Automated Review Management System (ARMS) will track all comments and provide information regarding their disposition or action taken, thereby solving the problem of lost, inadvertently omitted, or disregarded comments.

### **TIPS:**

- Remember that DEH design reviews should involve maximum participation, not only by AE personnel, but also by those who will provide utilities support and operate and maintain the facility. Encourage as many DEH personnel as possible to attend the Military Design Review course.
- Insist that the prospective occupant of the project—the true customer—participate in all design reviews.
- Conduct DEH design reviews as informal meetings or workshops. Avoid passing review documents through the organization in serial order. Obtain enough copies to furnish one to each division and office. Thoroughly explain the design, because many customers and maintenance personnel do not understand design drawings.

- Encourage supporting districts to press for early ARMS implementation. DEHs should request software and training on this system from their supporting districts.
- DEH reviews should focus on the following:
  - Operability and maintainability.
  - Adherence to local safety and fire protection codes, procedures, and regulations.
  - Mechanical and electrical systems.
  - Environmental, historical, and archeological considerations and compliance.
  - Compatibility with the installation design guide.
  - Adherence to guidelines set forth in the project development brochure.
  - Compatibility of the finishes and materials with installation stockages.
  - Compatibility with existing hardware systems.
  - Spare parts and components requirements, especially outside the continental United States.
  - Requirements for contractor-performed, installation-funded operation and maintenance support.
  - Connection to existing utilities.
  - Adequacy and sufficiency of site improvements including parking.
  - Contractor plant and staging area requirements.
  - Operations and maintenance training requirements.
  - Project phasing requirements.
  - Relocation scheduling and interim use facility requirements.
  - Demolition and disposal requirements.
  - OPA-funded and communications requirements.
  - Related operations and maintenance projects.
- See the Lessons Learned section, Subject: Design Review Process.

**PROPOSER OFFICE:** CEMP-ES

**POC TELEPHONE #:** CIV (202) 272-8887, MIL AV 285-8887

## **SUBJECT: Architect/Engineer (AE) Indefinite Delivery-Type (IDT) Contracts**

### **POLICY:**

- FAR, Part 36
- DFAR, Part 236
- AFAR, Part 236
- EFARS, Part 236
- EP 715-1-4, 1 May 88

### **GUIDANCE:**

AE contracts supplement the in-house engineering and design capabilities of DEH and district organizations. IDT contracts are a flexible form of AE contracts appropriate for DEH operations at nearly all locations.

IDT contracts are appropriate when the delivery schedule and scope of effort of AE services required by the installation are not fully known in advance. That is, the amount, general location, type of services, and overall duration of required services are known at time of award, but the specific project scope and schedule are not known. Individual delivery orders for these work elements are established during the overall contract performance period.

The maximum allowable dollar value of AE IDT contracts is \$400,000 per year with a maximum dollar value of \$75,000 per delivery order. IDT contract terms last for one year and may have an additional one-year option (when justified). AE IDTs may extend beyond the initial year only if an option year was included in the initial solicitation and contract.

The Corps of Engineers is the contracting agent for acquiring AE services within the Army. Other qualified contracting officers may be named as successor contracting officers for the purpose of administering AE IDTs.

AE contracts are acquired through the use of negotiated acquisition techniques, using pre-selection and selection boards to determine the most technically qualified firm for the work. AE contracts are not acquired on the basis of price (sealed bidding). AE contract policy is in accordance with the Brooks Act (PL 92-582).

Because of the complexity of negotiated acquisition techniques, establishing AE contracts requires at least 4 to 6 months' lead time. AE contracts having a value of more than \$500,000 must be audited by the Defense Contract Audit Agency prior to award, which typically takes from 30 to 60 days.

The Brooks Act prohibits AE expenditures in excess of 6 percent of the estimated construction cost of the project. This 6 percent limit applies only to the primary (design) services and does not include studies, investigations, reproduction services, and other secondary costs.

Qualified DEH personnel may apply for, and be appointed as, contracting officer's representative (COR) for administering AE IDTs. CORs are accountable to the appointing contracting officer and may only administer the contract within their appointment and the existing terms of the contract.

CORs inspect, evaluate, and accept AE services. The Corps also operates and manages a formal system of evaluating AE performance, the AE Contract Administration Support System.

#### TIPS:

- Ensure that new AE IDT contracts requirements (or an option year, to an existing IDT contract) are identified and formally reported to the supporting USACE district far enough in advance to allow adequate time to acquire this special type of contract.
- Be aware that an installation should have more than one AE IDT contract to adequately support the DEH program. Stagger the performance periods of these contracts so that they don't expire at the same time.
- Have DEH engineering personnel participate on district pre selection and selection boards during the AE selection process.
- Ensure that DEH personnel administering AE contracts are fully qualified and trained—through both formal contract training courses and refreshers, as well as close contact with district personnel who acquire and administer AE contracts.
- Ensure DEH personnel do not instruct AEs to begin work before the contract or delivery order has been formally established, or to continue to work after the contract performance period has expired.
- Establish formal procedures and responsibilities for acquiring and administering AE contracts by negotiating a memorandum of understanding (MOU) between the installation and the district. Pay special attention in the MOU to planning responsibilities and administrative lead times needed for acquiring contracts and processing delivery orders.
- Track the processing and payment of invoices to avoid late payment penalties. Also ensure that the COR adequately documents contract execution and keeps district personnel informed of the contractor's performance.
- Notify districts as soon as possible if any standard contract policy requirements must be waived. Be sure there is adequate justification to support such a request.
- Installation DEHs may be able to use existing district IDTs as well as the IDTs they are administering—contact your supporting district for details.
- Be aware that the roles and responsibilities for administering AE IDTs may vary with the DEH and district involved. For instance, the DEH may fully scope, negotiate, inspect, accept, and pay for the AE services for each delivery order, with only oversight and formal placement of orders by the district contracting officer. Alternatively, the DEH may want the district to scope, negotiate, inspect, and accept the services for the DEH and will reimburse the district for the costs. Discuss the various options, their costs, advantages, and disadvantages with the district engineer staff.
- Remember that the DEH COR cannot waive or change the established terms and conditions of the basic contract. These actions can only be done by the district contracting officer.



- Ensure DEH personnel provide the district complete interim and final evaluations of AE contractor performance.
- Coordinate any issues involving the enforcement of AE responsibility with the supporting district staff.
- For further reference, contact the supporting district and obtain a copy of EP 715-1-4, 1 May 88.

PROPONENT OFFICE: CEMP-ES

POC TELEPHONE #: CIV (202) 272-8887, MIL AV 285-8887

## **SUBJECT: Life-Cycle Project Management**

### **POLICY:**

- Implementation Letter to USACE divisions and districts, 1 Feb 90
- Chief of Engineers Guidance Letter, 5 Feb 90

### **GUIDANCE:**

Life-cycle project management is a management process that revolves around a single point of contact, the project manager, who has the authority and management tools necessary to manage a project from design to construction completion within the constraints of budget, schedule, and quality. The benefits of life-cycle project management include project management continuity, improved communications with the customer and users, earlier documented changes, and focusing total USACE resources on the project.

The project manager works from a project management plan prepared at the beginning of the project and assesses the project's status monthly in terms of what was scheduled, what is actual, and what can be forecasted as a result of the current status. The monthly forecast addresses any change to time and cost of design and construction.

### **CRITICAL ISSUES:**

The management process begins when the district receives a directive authorizing the design of a military construction (MILCON) project. A project manager is assigned to the project, which remains under the district's control, generally until the warranty period expires. The project manager is authorized to task technical and support elements to provide the support needed to execute the project. Each office provides information on costs and scheduling to enable the project manager to develop a written management plan detailing all project design and construction management activities, including objectives, acquisition methods, milestones, and costs. This plan is thoroughly coordinated with all parties including the customer and user. The project manager makes decisions

concerning budget status, schedule, and quality and provides an on-going history of the project's design and construction.

### **TIPS:**

- Be aware of the implementation of this concept for major MILCON projects in Feb 90.
- Be an active participant in developing project management plans for each MILCON project designed or constructed on the installation.

PROPONENT OFFICE: CEMP-M

POC TELEPHONE #: CIV (202) 272-1995, MIL AV 285-1995

## **SUBJECT: Project Turn Over Procedures**

POLICY: ER 415-345-38, 2 Nov 87, Transfer and Warranties

### **GUIDANCE:**

USACE will accept from the contractor and transfer to the DEH any facilities that have been completed according to contract requirements (or substantially completed with minor deficiencies that will not interfere with the designed use of the facilities). USACE will execute transfer documents and furnish warranty information to the DEH at the time of facility transfer.

### **CRITICAL ISSUES:**

During the transfer, DEHs should expect the USACE area resident manager to furnish the following:

- Advance written notice of the joint inspection.
- Real property list.
- Operating and maintenance manuals.
- Equipment warranty list.
- All warranty documents, test results, keys, and training.
- Joint inspection by the contractor, USACE, and DEH.
- Signed transfer documents, DD Form 1354.

### **TIPS:**

- Remember that warranty enforcement often requires that designated items not be serviced by DEH personnel.
- Review operating and maintenance manuals furnished by USACE for completeness and adequacy.
- Insist upon thorough operations and maintenance training of maintenance personnel. Send the right people to be trained.
- Be sure that completion transfer data are complete, including real property and equipment lists.

- Monitor deficiencies to ensure timeliness and adequacy of corrections.
- Insist that as-built drawings be turned over as soon as possible.
- Follow-up with district regarding the DD Form 1354.
- Request a copy of the above-referenced ER from the supporting district.
- See the Lessons Learned section, Subject: Design Construction Analysis Feedback (DCAF) Bulletin 89-2.

PROPOSER OFFICE: CEMP-CP

POC TELEPHONE #: CIV (202) 272-1380, MIL AV 285-1380

### **SUBJECT: Warranty of Construction**

POLICY: ER 415-345-38, 2 Nov 87, Transfer and Warranties

The DEH should contact the contractor, vendor, or manufacturer directly to correct any defects covered by a warranty, unless procedures have been modified by a local memorandum of understanding.

#### **GUIDANCE:**

If initial efforts to resolve the problem with the contractor are unsuccessful, the DEH should contact the supporting USACE division or district for further action. If the defect is the responsibility of the contractor, initial efforts to obtain correction must be made through the avenues provided by the construction contract.

Between 4 and 9 months after transfer, the occupant, DEH, and USACE will perform joint inspections to identify any warranty defects. Warranty procedures for typical defects are set forth in ER 415-345-38.

#### **CRITICAL ISSUES:**

Neither acceptance of a facility by the government nor the end of the warranty period ends the contractor's, manufacturer's, or the supplier's liability for latent defects.

#### **TIPS:**

- Ensure that the proper personnel represent the DEH and the occupant at any follow-up warranty inspections.
- Remember that DEHs and district contracting officers must pursue latent defect actions when defects are discovered after the specific warranty period.
- Ensure that contractors respond in a timely manner to warranty complaints and follow-up actions.
- Maintain a log of inspections done.
- Make sure that joint warranty inspections are comprehensive and thorough.

- Insist that the supporting division or district pursues warranty claims in a timely manner.

PROPOSER OFFICE: CEMP-CP

POC TELEPHONE #: CIV (202) 272-1380, MIL AV 285-1380

### **SUBJECT: Operations and Maintenance Manuals and As-Built Drawings**

#### **POLICY:**

- ER 310-3-11, Operation and Maintenance Manuals, 15 Feb 85
- ER 415-345-38, 7 Nov 87, Transfer and Warranties, 7 Nov 87

#### **GUIDANCE:**

The efficient operation and effective performance of maintenance on complex facilities systems and subsystems require adequately prepared operations and maintenance documentation, together with properly trained DEH operations and maintenance personnel. These require USACE and DEH interface throughout project inception, programming, design, execution, and post-construction. The update of AR 415-15 will call for identifying any requirements for systems-oriented operations and maintenance manuals when projects are programmed. The following operation and maintenance documentation will be required in the upcoming revision of ER 310-3-11:

- Technical Concept Narrative
- Systems Operations and Maintenance Manual, containing the following:
  - Index
  - Functioning description of the system
  - Operating instructions
  - Maintenance instructions
  - Repair instructions
  - Trouble-shooting instructions
  - Safety considerations
  - Spare parts list
  - Special tools
- Master Equipment List
- Training Plan

#### **CRITICAL ISSUES:**

To manage complex new facilities effectively, such as sewage treatment plants, major medical facilities, and large heating and cooling plants, the district and DEH staffs must adequately plan, budget, and staff for facility transfer. This can best be obtained through early coordination and continues throughout the planning, programming, design, and construction phases.

#### TIPS:

- The DEH should make use of the Operation and Maintenance Engineering Enhancement (OMEE) program during the crucial transition period. OMEE, which is currently being tested only on hospital facilities, allows the construction contractor the option of operating and maintaining the facility during the warranty period, generally one year. The supported installation must provide the OMA funds to support OMEE and those funds must be identified during the planning and programming phases. The Huntsville Division is the technical center of expertise for this program.
- Identify the need for systems-oriented operation and maintenance manuals on the DD Form 1391 and the project development brochure for the project.
- Expect the supporting division or district to furnish as-built drawings of completed facilities within 30 days following facility turn over. Follow-up requests should be made to the supporting office if this standard is not met.

PROPOSER OFFICE: CEMP-CP

POC TELEPHONE #: CIV (202) 272-8652, MIL AV 285-8652

### **SUBJECT: Operations and Maintenance Engineering Enhancement (OMEE) Program**

#### POLICY:

- ER 310-3-11
- Draft ER 310-345-11

When constructing a new facility, the USACE division or district must furnish the DEH with adequate operations and maintenance manuals and provide operations and maintenance training on building systems and equipment as appropriate. A complex (from an operations and maintenance perspective) facility may also justify acquiring operations and maintenance services (typically from 1 to 2 years following facility completion) as an option under the construction contract.

#### GUIDANCE:

The goal of the above policy is to solve problems associated with the turn over of a newly constructed, complex facility. Prove out of the new facility and enforcement of warranties during the first year can be difficult whenever preventive maintenance is required to preserve the warranties. Key maintenance personnel may not have been available to receive the operations and maintenance training offered by the construction

contractor. It is also difficult for the DEH to budget and staff for maintenance of a complex facility during the initial years of operation. The construction contractor could provide operations and maintenance on selected systems during the warranty period, and perhaps for a year thereafter, to allow the DEH to make the transition into full operations and maintenance responsibility.

#### CRITICAL ISSUES:

Options to construction contracts for operations and maintenance services must be funded with installation OMA dollars. The operations and maintenance option is solicited along with the initial construction. The successful contractor is usually the low bidder for the sum of the two costs: construction plus operations and maintenance. Because many complex facilities can take 2 or more years to complete, the DEH has the opportunity to plan funding for the operations and maintenance price offered by the low bidder. If the operations and maintenance price is unreasonably high, the DEH can elect to accomplish the operations and maintenance by other means instead of funding the award of the option at the beneficial occupancy date.

The operations and maintenance option is divided into two periods, the warranty period and the transition period. The best way to add the operations and maintenance service option to a project is to identify it in the DD Form 1391 as an unfunded requirement (OMA instead of military construction, Army).

#### TIPS:

- Remember that operations and maintenance services obtained from a construction contractor are likely to be more expensive than in-house or competitive procurement among prospective operations and maintenance contractors.
- Try to limit the scope of operations and maintenance services under the contract option to those systems that require a long prove-out, substantial training for proper operation and maintenance, preventive maintenance to preserve warranties or are critical for mission accomplishment. The value added during the warranty and operations and maintenance transition phases should be well worth the higher initial maintenance cost for those systems.
- Plan and budget for an overlap of operations and maintenance capability during the last 6 months of the construction contractor's service period.

PROPOSER OFFICE: U.S. Army Engineer Division,  
Huntsville, ATTN: CEHND-ED-PM, PO Box 1600,  
Huntsville, AL 35807-4301

POC TELEPHONE #: CIV (205) 895-5533, MIL AV 788-5533



**DEH PROJECT  
MANAGEMENT**





## **SUBJECT: Military Construction, Army (MCA) Program Development**

### **POLICY:**

- AR 415-15 (Draft - Jun 89)
- HQDA Program Budget Guidance

### **GUIDANCE:**

- The MACOM commander directly affects development of MCA Program by submitting the MACOM Program Objective Memorandum (POM) during the fall.
- HQDA Construction Requirements Review Committee validates the requirements for projects submitted.
- The Army POM is submitted to the Office of the Secretary of Defense (OSD) in early April—Army budget, to include MCA Program, is submitted to OSD comptroller in September (1391s included).
- The approved MCA Program is forwarded to Congress as part of the President's budget in January.

### **CRITICAL ISSUES:**

- HQDA is no longer establishes MCA target for MACOMs.
- MACOMs establish their own level of funding.
- Complete 1391s for program year must be submitted to HQDA 1 Feb.
- Only those projects that have valid requirements and can reach 35 percent design by 1 Aug are included in the OSD budget submission in September.

### **TIPS:**

- Ensure that 35mm slides are available for each project submitted to HQDA.
- Identify, prioritize, and submit to HQDA as part of MACOM POM any unresourced requirements.
- Identify your facility requirements in concert with the installation master plan.
- Maintain stable project priorities.
- Do not radically change your MCA program with change in commander.
- Remember that your MACOM sets funding levels and priorities; do not assume that there is "additional" money at HQDA for all your facility requirements.

PROPOSER OFFICE: DAEN-ZCP

POC NAME: LTC Dick Small

POC TELEPHONE #: CIV (703) 614-4301, MIL AV 224-4301

## **SUBJECT: Military Construction, Army (MCA) 1391 Review**

### **POLICY: AR 415-15**

### **GUIDANCE:**

The DD Form 1391 is used to program, authorize, and appropriate funds for construction of projects exceeding MACOM approval authority. Complete 1391s are used by MACOMs, HQDA, and Corps Districts in justifying projects to the Office of the Secretary of Defense (OSD) and Congress; however, only the front sheets (usually 3 pages) are actually reviewed by OSD and Congress. Each project must be justified based on mission requirements.

### **CRITICAL ISSUES:**

- Complete 1391s for program year are due at HQDA 1 Feb.
- Project review boards are held at HQDA each spring early summer to review the Guidance Year Program and issue design releases.
- The MCA budget submission goes to OSD in September. It is essential that 1391s are accurate and correct prior to that submission (1 Jul).
- The front sheet 1391 is the only part reviewed by OSD and Congress and must "sell" the project.
- Project development brochures are required for each project before preparation of the 1391.

### **TIPS:**

- Review each 1391 submitted to your MACOM.
- Ensure that each 1391 is clear and easily understood by laypersons.
- Be sure that the installation commander has reviewed and signed each 1391 before submission to your MACOM and HQDA.
- Obtain copy of HQDA Project Review Board comments from your MACOM and make corrections to 1391s by 1 Jul.
- Track design status and cost estimates of all MCA designs with your supporting district monthly.
- Pull review comments from 1391 processor at least monthly.
- Ensure that current information is passed on to the MACOM and HQDA via PAXmail.

PROPOSER OFFICE: DAEN-ZCP

POC NAME: LTC Dick Small

POC TELEPHONE #: CIV (703) 614-4301, MIL AV 224-4301

## Military Construction, Army (MCA) 1391 Checklist

Check the following:

Block 2—1391 reflects the correct program year.

Block 3—Shows correct location.

Block 4—Has no obvious error in title when compared with facilities in Block 9 and category code in Block 6.

Block 6—Reflects the main/major/largest facility in Block 9.

Block 9

- Make sure this is the Primary Facility: Size does not exceed shortfall.
- Information Systems Cost in Block 9A and B must agree with SRP6 (new format).
- Check De no and Commo Costs against itemized Block 9B.
- Installed Equipment Costs should match Block 12B Supplemental Data.
- Ensure Block 9E, Installed Equip-Other Appropriation, contains a cost if Intrusion Detection System (IDS) installation is included in Block 9A.
- Fire protection systems should not appear as separate primary or supporting facilities (part of overall unit cost).
- Costs must be consistent between similar/identical projects at similar/identical locations, within the same year.
- If IDS is included in the project, be sure installation costs are shown in Block 9A.

Block 10—Addresses all components of the project (Block 9), heat/air conditioning tons, square footage (SF) and number of building(s) being demolished and IDS installation if part of project. If supporting facilities costs exceed 20 percent of the primary facility costs, an explanation must be provided in this block.

Block 11—Should reflect installation inventory for catcode in Block 6. Adequate plus quantity in Block 9 (for the component related to the Block 6 catcode) should not exceed requirement. Unit of measure should be appropriate for the catcode (for example, SF, SY, EA, PN) (See AR 415-28). In Block 11L, ensure "current or new" mission is correct. All text paragraphs should

- Be clear, concise, and unemotional.
- Give no reference to specific building numbers, unit organizations (refer to type unit), regulation numbers, or supporting paragraphs.
- Explain any significant difference in Line 11 substandard and demolition SF.
- Explain if project is not being built to DA standard and/or does not satisfy requirement (such as due to real estate constraints).
- Avoid acronyms/jargon (spell out first use).
- Indicate number (by type) of vehicles/aircraft and mechanics supported by a project, when appropriate.

- Address related/supported projects, including status, especially when other projects depend on this one being built. Ensure FYs of referenced projects are correct and appropriate to the budget being prepared.

- Address readiness, unit alert upload, documented economic losses, wartime use, documentable productivity, environment, security, mission, and safety in the impact statement.
- Avoid negative statements.

Additional paragraph should

- Explain any unusually high/low primary or supporting facility costs (including site preparation costs).
- Contain physical security statement and host nation/NATO statement outside continental United States.
- Address DDESB approval when applicable.
- Address economic analysis if other text says project is "more economical," has "cost savings," or is "more efficient."

Supplemental should

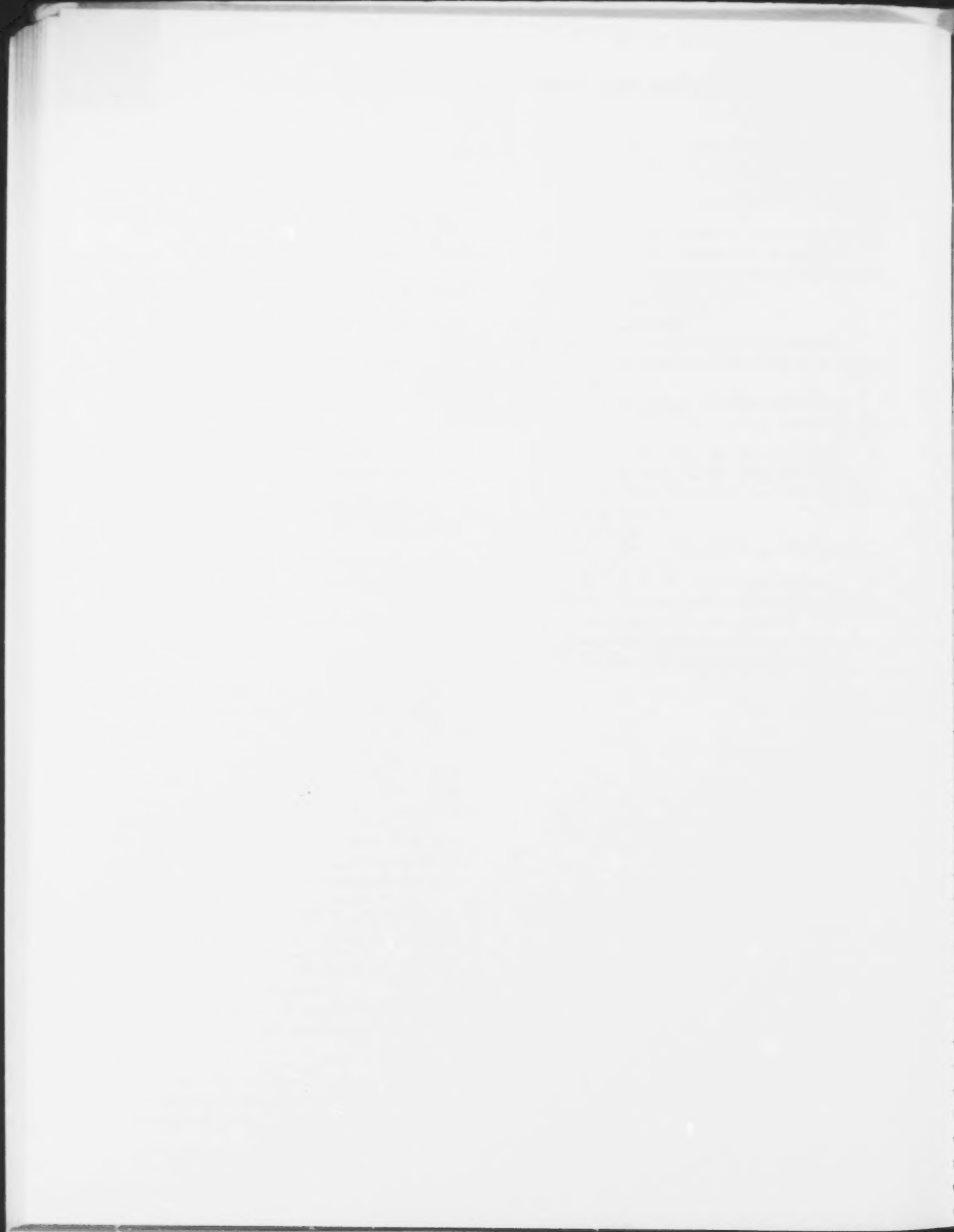
- Have no obvious errors in design or estimated construction dates.
- Reflect at least 35 percent in 12A (10b).

Pull 1391 review comments and ensure MACOM and other agency comments have been addressed.

Ensure commander has signed form (will appear as /S/).

Ensure 35mm slides are available for each project.

**CIVILIAN  
PERSONNEL  
CAREER**





## **SUBJECT: The Army Civilian Training, Education, and Development System (ACTEDS)**

**POLICY:** DA-directed, AR 690-950, Civilian Personnel Career Management, 31 Jul 77

### **GUIDANCE:**

ACTEDS plans are—

- A sequential, progressive, and systematic approach to civilian training, education, and development, which parallels the military training program.
- Career Program (CP) specific (CP-18, engineers and scientists (resources and construction (R&C)), and (CP-27, housing management).
- For all employees of series covered by a CP.
- Descriptions of a recommended core of technical and managerial training, developmental assignment, and on-the job experience.
- Descriptions of required supervisors', managers', and CP managers' counselling and mentoring responsibilities.
- The final authority for determining CP functional and leader development training and development requirements and priorities.

### **CRITICAL ISSUES:**

- Implementation of ACTEDS is a joint responsibility among CP managers, supervisors, careerists, and the Civilian Personnel Office (CPO).
- Funding sources are (1) HQDA will centrally fund DA interns; generic supervisory, managerial, and leadership training; Army Management Staff College; Career Program-wide competitive programs; Senior Service Colleges; and DA sponsored Fellowship Programs, and (2) activities must plan to resource all training not provided centrally.
- CP-18 and CP-27 will use ACTEDS plans to establish ACCES (Army Civilian Career Evaluation System) and SKAP (skills, knowledge, abilities, and personal characteristics) panel evaluation criteria.

### **TIPS:**

- All CPOs have immediate access to the CP-18 ACTEDS plan through the Training Resource Access Information Network, which is an automated service provided by HQDA through a vendor (TIMEPLACE, Inc.).
- The CP-27 functional chief's representative (FCR) has distributed hard copies of the Housing Management ACTEDS plan to all MACOMs and operating CPOs and through functional channels.
- The CP-18 FCR has distributed hard copies of the engineers and scientists R&C Draft ACTEDS plan to all MACOMs and operating CPOs and through functional channels. Utilization of this document is highly encouraged while awaiting final approval.

**PROPONENT OFFICE:** CEHSC-T

**POC NAME:** Beth Kerns

**POC TELEPHONE #:** CIV (703) 355-3143, MIL AV 345-3143

## **SUBJECT: Civilian Performance Plans and Appraisals**

### **POLICY:**

- FPM Chap 410
- FPM Chap 430
- AR 690-430
- AR 690-540
- AR 672-20
- Various MACOM and local civilian personnel issuances

### **GUIDANCE:**

Performance appraisal of civilian employees is as important to the organization and the career of the employee as the Officer Efficiency Report (OER) and Enlisted Efficiency Report (EER) are to the Army mission and the individual officer and enlisted service member.

Two appraisal systems operate in the DA: GM and GS. GM covers GM 13-15 grade levels (supervisors and management officials), and GS pertains to all other employees. The main difference between the two is the time of the rating period. GM employees' rating period is from 1 Jul to 30 Jun each year. The rating period for all other employees is established based on local policy. Another difference between the two systems is the money available for performance awards. The GM award pool amount is set by law, while DA determines the size of the GS award pool.

### **CRITICAL ISSUES:**

- Develop meaningful, measurable, and understandable performance standards that contribute to overall DEH mission accomplishment.
- Identify critical elements on the basis that unacceptable performance of those elements will result in unacceptable performance of the entire position.
- Performance appraisal is a continuous process, not just once a year when the formal written appraisal is required.
- The Individual Development Plan (IDP) is a crucial part of the performance appraisal process.

### **TIPS:**

- Employees should participate in setting performance standards. This is a good basis for discussion, and provides mutual understanding.

- Have the employee provide a list of accomplishments on which to base the final appraisal.
- As the DEH who manages supervisors, remember how you expect to be appraised, and remember also that you get your work accomplished through others.
- Don't hesitate to confer with the Labor and Management Employee Relations Branch of your servicing Civilian Personnel Office (CPO) for assistance in developing performance standards, identifying critical elements, developing IDPs, and evaluating performance.

PROPOSER OFFICE: Local CPO, MACOM Civilian Personnel Directorate, PERSCOM, and DA DCSPER

POC NAME: Jack Spittal, USAEHSC, Directorate of Professional Development and Training, Career Management Branch

POC TELEPHONE #: CIV (703) 355-7594, MIL AV 345-7594, FAXID: EHSCZEX

## **SUBJECT: Awards Program (DEH)**

### **POLICY:**

- TN 420-10-01, 31 Mar 90, Chapter 8, DEH Annual Awards Program
- AR 210-50, Installation Housing Management, 24 Apr 90, Chapter 7-42 and Appendix F
- AR 11-27, Chapter 9-6 d.(4)
- DOD Instruction 4700.2
- AR 200-1, para. 12-12.c

### **GUIDANCE:**

DEH Annual Awards Program

Recognition under this program is available for seven individual and two corporate award categories.

- Individual award categories:  
The William C. Gribble Jr., DEH Executive of the Year  
The DEH Engineering, Plans, and Services Executive of the Year  
The DEH Engineer, Resources Management Executive of the Year  
The DEH Housing Executive of the Year  
The DEH Operations and Maintenance Executive of the Year  
The DEH Support Executive of the Year  
MACOM Support to the DEH
- Corporate award categories:  
The Installation Support Programs of the Year  
The RPMA Contractor of the Year

Eligibility criteria for nomination differ for each award. TN-420-10-01, Appendices J through R, outlines the criteria for each award. Nominations are prepared in accordance with TN 420-10-01, Appendix S. The awards are presented in mid-December during the Worldwide DEH Training Conference.

### **CRITICAL ISSUES:**

Time constraints are imposed on the nomination and selection process to ensure winner determination in sufficient time for recognition during the Worldwide DEH Training Conference.

### **TIPS:**

- Plan ahead to allow enough time for a good write-up. Excellent employees and services are worth it!

PROPOSER OFFICE: CEHSC-T

POC NAME: Beth Kerns

POC TELEPHONE #: CIV (703) 355-3143, MIL AV 345-3143

## **SUBJECT: DA Army Lodging Operation of the Year Award**

### **GUIDANCE:**

The DA Army Lodging Operation of the Year award is applicable to active Army installations and activities worldwide that operate transient housing facilities.

Nominating procedures are as follows:

- All transient facilities at an installation may be considered (both TDY and guest housing).
- There are two categories for award—small (up to 100 units) and large (more than 100 units). For fiscal year 1990, pilot categories include small (up to 75 units), medium (between 76 and 299 units), and large (more than 300 units).
- MACOMs may elect to submit nominations in one or all categories.
- Nominations are prepared in accordance with AR 210-50, Appendix F.

Areas of evaluation are as follows:

- Administrative management
- Personnel management
- Customer service
- Financial management
- Security and safety
- Overall facility management

The awards are presented by an appropriate HQDA representative.

#### CRITICAL ISSUES:

- Contract quarters are not eligible for competition.
- Installations that have won the award for two consecutive years cannot compete for the year following their second win.

#### TIPS:

- Program participation is optional.
- Award is typically presented at Worldwide DEH Training Conference.

PROPONENT OFFICE: CEHSC-H

POC NAME: Sherri O'Keefe

POC TELEPHONE #: CIV (703) 355-7515, MIL AV 345-7515

### **SUBJECT: Secretary of the Army Environmental Quality Award**

#### GUIDANCE:

Recognizes the DOD installation that has improved environmental quality in the prior 2 years and recognizes the military or civilian employee who has made the most significant contribution to the environmental quality program during the preceding 2 years. The Secretary of the Army presents an environmental quality award to the individual and the installation.

Nominations must be prepared in accordance with DOD Instruction 4700.2 and AR 200-1, para. 12-12.c. Evaluation criteria categories are as follows:

- Leadership
- Responsible trusteeship
- Best program in view of military mission and natural systems capabilities

#### CRITICAL ISSUES:

To recognize the effect of different missions of installations, the award is given on alternate years to an industrial installation (Category A) and to a nonindustrial installation (Category B). Category A installations are defined as those with a primary mission of producing, maintaining, or rehabilitating military materiel. MACOMs select the best reports for submission to HQDA by 31 March.

#### TIPS:

- Program participation is optional.
- At the Secretary of the Army's discretion, the award is presented either at the winning installation or at a Pentagon ceremony.

PROPONENT OFFICE: ENVR-EP

POC NAME: Timothy Julius

POC TELEPHONE #: CIV (202) 693-5032, MIL AV 223-5032

### **SUBJECT: Civilian Career Management System (CMS)**

POLICY: AR 690-950, Civilian Personnel Career Management, 8 Sep 88, Chaps. 1-3, 11

#### GUIDANCE:

The CMS help manage approximately one-fourth of Army civilian employees. The CMS meets DA staffing needs in professional, technical, and administrative jobs common to most activities. The three major components are planned intake, career referral, and career development. The Career Program Manager (CPM) plays an integral role in each of these components. Within the DEH, the most prevalent Career Programs (CPs) are engineer and scientist (CP-18) and housing management (CP-27). Typically, the deputy DEH and housing manager are the installation CPMs for CP-18 and CP-27 respectively.

**Planned Intake.** Staff issues are projected and replacement needs determined for each Career Program through forecasting techniques. Many of these needs are met through intake of experienced personnel in GS-9 and above positions. The remaining DA-wide Career Program staffing needs are met by the intern program through planned intake of entry-level personnel (GS-5/7) with high potential.

**Career Referral.** DA has determined that establishing a centralized inventory of candidates for key vacancies has some advantages over announcing each of these positions individually under local Merit Promotion and Placement procedures. Mandatory central referral provides candidates for jobs at specific grade levels (usually the GS-13 level and above for CP-18 registrants and at the GS-11 level and above for CP-27 registrants) and ensures an adequate number of high-quality candidates, provides adequate opportunities for advancement, encourages mobility, and meets Affirmative Action requirements. To be considered for positions at mandatory referral levels, candidates must have current, active registration in the appropriate Career Program inventory, which consists of submitting the appropriate career appraisal forms to the centralized

referral activity. Procedural requirements vary by Career Program. Each Career Program publishes directives and regulations that describe the documents to be submitted, suspense dates for submission, and provisions for updating or renewing registration. CP-18 uses the SKAP (skills, knowledge, abilities, and personal characteristics) registration system and CP-27 uses the ACCES (Army Civilian Career Evaluation System) registration.

**Career Development.** Training and development are vital parts of career management. At each stage in a civilian career, training and development assignments improve job performance and build qualifications for career advancement. Training and developmental assignments ensure that employees gain the knowledge, skills, and abilities needed to advance and to perform successfully at successive grade levels.

#### CRITICAL ISSUES:

The CPMs at the installation and MACOM levels can provide useful information and guidance:

#### TIPS:

- Be sure all employees have individual training plans that structure training and development to meet their career goals and support Army needs.
- Be sure that Individual Development Plans (IDPs) are prepared for personnel at all grade levels to provide broad based, quality training and development.
- Remember that only those who maintain current, active registration in the appropriate Career Program inventory will be considered for positions at mandatory referral levels.
- Be sure that employees have immediate access to AR 690-950, Civilian Personnel Career Management, to plan and discuss their career development with their immediate supervisors and CPMs.

PROPOSER OFFICE: CEHSC-TC

POC NAME: Beth Kerns

POC TELEPHONE #: CIV (703) 355-3143, MIL AV 345-3143

### **SUBJECT: Intern Program**

POLICY: AR 690-950, MACOM and Local Civilian Personnel Issuances

#### GUIDANCE:

The DA funds and authorizes MACOMs and installations to hire interns to be trained to meet future DEH staffing needs. The primary positions covered by the intern program in the DEH are engineers and scientists and

housing management specialists, although interns for such positions as budget analysts and inventory management specialists may be assigned to the DEH organization.

#### CRITICAL ISSUES:

Interns should be positively recruited. Contacts should be developed with college and university placement offices, as well as job fairs. An individual intern training plan should be prepared for each intern and should take into account the specific education and experience required for the target position.

As a minimum, every intern in the DEH, regardless of background, should attend the DEH Management Course and the Intern Leadership Course. Interns should be rotated through the various DEH functional areas and receive meaningful assignments to prepare them for future full performance. Intern performance must be evaluated frequently (at least semi-annually) to provide feedback and ensure deficiencies are corrected in a timely manner.

#### TIPS:

- Take an active interest in the interns. Meet with them periodically.
- An intern training plan is required regardless of the funding source and remains in effect until the intern reaches the target grade. Review the plan personally—doing so lets your supervisors know that you are interested in the intern program and helps ensure that the program is running smoothly.
- Remember that the intern is a trainee and not just “free labor.”
- Remember also that the intern program is designed to meet DA DEH corporate needs, not just the needs of the installation to which the intern is assigned.
- Review intern performance appraisals to ensure that the appraisals have been conducted and to get an idea of how the interns are progressing.
- Remember that an organization-wide commitment is needed to make the intern program successful.

PROPOSER OFFICE: Career Program Functional Chiefs (Engineer and Scientist (Resources and Construction) and Housing Management-Chief of Engineers), PERSCOM, and MACOM Engineer and Civilian Personnel Directorate.

POC NAME: Jack Spittal, USAEHSC, Directorate of Professional Development and Training, Career Management Division.

POC TELEPHONE #: CIV (703) 355-7594, MIL AV 345-7594, FAXID: EMSCZEX

## **SUBJECT: Civilian Career Development Opportunities**

### **POLICY:**

- AR 690-950, 8 Sep 88, Chapter 1-3, 11
- AR 690-400, Chapter 410
- AR 690-400, Chapter 413

### **GUIDANCE:**

Training and development opportunities can be categorized into four basic methods: on-the-job training (OJT), formal classroom instruction, developmental assignments, and self-development. Although not typically considered training, OJT is used extensively, especially with respect to interns. Most other training needs can be met by short-term courses. However, to keep up with management, as well as technical and scientific advancements, some long-term training and developmental programs must be provided.

Employee reassignment for development within an organization proves most advantageous for both the individual and the organization. The employee gains a broadened background by working in more than one specialty area, while the organization benefits from increased diversity. Coordinating developmental assignments between two organizations is equally effective for the employee; however, it often is more difficult to orchestrate.

Self-development is an independent voluntary effort initiated and conducted by an employee. Employees should be encouraged to take advantage of available correspondence courses, opportunities for study at nearby colleges and universities, planned reading activities, and participation in professional organizations (such as the Society of American Military Engineers and the Professional Housing Management Association).

Three primary types of training and development (technical, functional, and managerial) exist within these four methods. Employees assigned to engineer and scientist (resources and construction) (CP-18) and housing management (CP-27) are most prevalent in the DEH community. Several common sources of training for these DEH personnel are listed below.

- Technical Training:  
Huntsville Division's Proponent Sponsored Engineer Corps Training (PROSPECT)  
Air Force Institute of Technology (AFIT), Wright-Patterson AFB, Ohio
- Functional Training:  
EHSC (Housing and Management)  
PROSPECT (commercial activities, quality assurance, real property, master planning)

- Manager and Executive Training and Development:  
PROSPECT (Human Resources Management Courses I-IV)  
OPM (Executive Seminar Centers in Kings Point, NY, Oakridge, TN, and Denver, CO)  
DA Long-Term Training (competitive, university training, developmental assignments, Senior Service College) Engineering and Housing Advanced Studies Program (competitive, long-term, sponsored by Corps for DEH personnel)  
Army Management Staff College (competitive, 14 weeks)  
Civilian Leadership Training (intern leadership developmental course; leadership, education, and development; and organizational leadership for executives)  
Personnel Management for Executives

### **CRITICAL ISSUES:**

Time constraints are imposed on the nomination and selection process for long-term training and development assignments.

### **TIPS:**

- Remember that the training and development branch of the servicing Civilian Personnel Office (CPO) maintains announcements of current training course offerings and information on available academic programs.
- Remember that all Army CPOs have immediate access to government and nongovernment course offerings through the Training Resource Access Information Network (TRAIN), an automated service provided by HQDA through a vendor (TIMEPLACE, Inc.).

PROPONENT OFFICE: CEHSC-TC

POC NAME: Beth Kerns

POC TELEPHONE #: CIV (703) 355-3143, MIL AV 345-3143

## **SUBJECT: Housing Career Development**

### **POLICY:**

- AR 690-950, 31 Aug 87
- AR 600-3, 18 Oct 89
- DA PAM 690-43, 18 Aug 89

### **GUIDANCE:**

Housing career development is intended to ensure planned development of the civilian work force through improved career management. It establishes a progressive,



sequential blending of work assignments and formal training from entry to senior level positions. It also provides technical, professional, and leadership development to enable the careerist to gain a broad range of experience in the housing career field and enhances occupation-based knowledge, skills, and abilities.

#### CRITICAL ISSUES:

- Develop a master training plan for housing management personnel (Career Program (CP) 27), model development assignments, and identify long-term training.
- Develop a training plan for housing support personnel, providing for crossover into the 1173 series, if so desired, without infringing on another career field.
- Provide a training plan for full performance level personnel (GS-5/7) in addition to the master intern training plan.

#### TIPS:

- Remember that the Army Civilian Training, Education and Development System (ACTEDS) for housing management has been distributed to the field for implementation. ACTEDS provides a master training plan for full performance personnel at all grade levels, interns, and support personnel and establishes guidance for preparing the Individual Development Plan to provide broad-based, quality training.
- Encourage use of valuable management tools such as ACTEDS and DA PAM 690-43.

PROPONENT OFFICE: Army Housing Office (CEHSC-HM-A)

POC NAME: Sherri O'Keefe

POC TELEPHONE #: CIV (703) 355-7509, MIL AV 345-7509

### **SUBJECT: Environmental Career Field**

POLICY: Career Program 18 (CP-18), Engineers and Scientists (Resources and Construction), is the Army Career Program for environmental professionals including environmental protection specialists (028s).

#### GUIDANCE:

- For information regarding referral activities through the Career Program, contact your local Civilian Personnel Office.
- The HQUSACE point of contact for CP-18 is Louise Crowell, CEHR-ZE, (202) 272-0826.
- For other career development information contact Hugh Exton, CEHSC-T, (703) 355-7542.

#### CRITICAL ISSUES:

- Development of an Environmental Intern Program, including a training plan.
- Development of an Army Civilian Training, Education and Development System (ACTEDS) program for environmental professionals.
- These two programs will help the Army attract, recruit, retain, and improve environmental staffing.

#### TIPS:

- For environmental positions within the DEH, be sure to check the category OT88, in addition to any other categories for which you are both interested and qualified.
- Describe skills and abilities and highlight experience. The referral panels tend to look more closely at these than the supervisor's ratings.

PROPONENT OFFICE: Army Environmental Office

POC NAME: Kathleen Fichter

POC TELEPHONE #: CIV (202) 693-5033, MIL AV 223-5032

## **LESSONS LEARNED**



# Lessons Learned: Resources and Work Management

## LESSONS LEARNED FROM AUDITS AND INSPECTIONS

### PROBLEM OR ISSUE: Backlog of Maintenance and Repair (BMAR)

**SOURCE DOCUMENT:**  
U.S. Army Audit Agency Advisory Report EC 87-A1,  
dated 10 Dec 86, on installation facility management

Established policies governing BMAR were not followed. Comprehensive facility inspections were not made (5-year lapse at one installation), and cost estimates for identified BMAR projects were often inaccurate and incomplete. The reported BMAR did not include all identified projects and included other projects that did not qualify as BMAR.

For example, one installation reported almost no BMAR for temporary World War II buildings even though extensive maintenance, repair, and upgrade efforts were planned. Conversely, one installation included work on 81 temporary buildings that were scheduled for disposal.

In addition, priorities for accomplishing maintenance and repair work were not uniformly established and followed. As a result, the accuracy of the reported BMAR was questionable, the Army could not be sure that the funds were applied to the most critical work, and previously reported deficiencies continued to exist.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Establish a project priority system.
- Establish and maintain procedures for identifying and reporting BMAR, determining and using project priorities at all command levels, and reporting unconstrained facilities resource requirements.
- Use established project priorities when deciding the extent of facilities engineering resources to provide to each area and which projects to fund.
- Be sure BMAR is based on periodic component inspections (and adequate resources are made available to identify failed or failing facilities).
- Be sure complete and accurate cost estimates support each project, and the BMAR list includes only qualified projects that have a defined scope of work.

POC NAME: Greg Tsukalas

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### PROBLEM OR ISSUE: Overtime Controls

**SOURCE DOCUMENT:**  
U.S. Army Audit Agency Report SW  
90-7, dated 12 Feb, on facilities engineering

Requests for overtime were not adequately justified or controlled, and about 44 percent of the requests were not approved before overtime was worked. Annual leave was granted during the same pay period in which overtime was worked, and alternatives to overtime were not considered. These conditions occurred primarily because of lack of command emphasis. Established procedures were not followed, and some overtime may not have been justified.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Do not approve overtime requests unless the requests include a detailed description of the work to be performed, the amount of work or backlog to be accomplished, the reasons why the work cannot be done during normal duty hours, and a statement as to what will happen if the work is not done.
- Sequentially number overtime requests to facilitate control and tracking.
- Approve overtime requests in writing before work is performed. For emergencies, obtain verbal approval and annotate the request with the date of the approval and the name of the approving official.
- Do not grant annual leave to employees scheduled to work overtime, except for emergencies or unusual circumstances.
- Include in the overtime requests the alternatives considered.

POC NAME: Stan Nickell (CEHSC-FM-M)

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## **PROBLEM OR ISSUE:** **Work Management**

### **SOURCE DOCUMENT:**

- U.S. Army Audit Agency SW 90-7, dated 12 Feb 90, on facilities engineering
- SW 90-17, dated 8 Jun 90, on engineering operations

Work estimates were not developed in sufficient detail because engineered performance standards or historical work data were not used, which resulted in inaccurate work requirements. In other instances, no work estimates were prepared.

Significant variances between work estimates and actual labor hours were not evaluated as required because of lack of management emphasis. Work sampling studies were not used to identify inefficient practices.

As a result, practices and procedures needing improvement were not identified.

### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Identify each task or work increment in detail when planning standing operations orders and individual job orders.
- Use engineered performance standards or historical work data to prepare labor hour estimates.
- Compare estimated with actual labor hours used for standing operations orders and individual job orders.
- Perform work sampling studies to identify inefficient work practices, and use the results to make necessary improvements.
- Evaluate worker efficiency.

POC NAME: Marty Ericson (CEHSC-FM-M)

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## **PROBLEM OR ISSUE:** **Contract Execution and Administration**

### **SOURCE DOCUMENT:**

U.S. Army Audit Agency Report  
SW 90-202, 29 Dec 89, on job order contracting (JOC)

Inadequate procedures were in place to execute delivery orders. Costs for non-prepriced items exceeded the established limits for delivery orders, and did not ensure that fair and reasonable prices were paid.

Ineffective methods were used to determine what type of work to contract. Some government estimates were not properly or adequately used to determine whether work

should be ordered under JOC. Some JOC work was not properly coordinated with other activities working on the same facilities. Installations and activities did not adequately review unit price books to detect pricing errors before contract award.

The DEH did not negotiate properly to reconcile differences between government estimates and contractor costs.

### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Do not implement JOC contracts until the necessary training is accomplished. Contracting officer's representative (COR), project managers, and ordering officers must be trained prior to contract start date.
- Be sure that letters designating ordering officers and COR clearly set forth both the authority designated and limitations of that authority. The contractor must receive and acknowledge copies of these designations to ensure that he or she is fully aware of such authority and limitations.
- Be sure the contracting officer establishes and maintains a system for monitoring whether ordering officers, COR, or other responsible individuals are exceeding their authority, for determining whether all required documentation is prepared and provides a complete and accurate audit trail, and for ensuring that all acquisition regulations are followed.
- Remember that only the contracting officer (or his or her designated representative, such as ordering officers) is allowed to conduct contract negotiations. The ordering officer's authority cannot be redelegated. The ordering officer should chair all price negotiations (i.e., non-prepriced work) for delivery orders. This does not mean, however, that the ordering officer should chair discussions to develop scope.
- Remember that memorandums of negotiations must name each item of work and record the negotiated price or cost of each. The memorandum must provide a complete audit trail.
- Be sure that the scope of work on a delivery order is adequate to determine the requirements of the delivery order. Project managers should establish the scope of work under a delivery order and ensure that both contractor and government have agreed on the scope.
- Be sure that JOC delivery order project managers coordinate their work with other DEH personnel and other contractors.
- Remember that independent government estimates for projects must contain adequate detailed information to be compared with the contractor's proposal and be effective in evaluating the appropriateness of JOC to meet the requirement.
- Be sure that project managers and contracting officers have determined that JOC specifications and price books have undergone technical review and validation and are tailored for the installation before contract solicitation.



PROPOSER OFFICE FOR ISSUE OR POLICY: Installation Services Branch (CEHSC-FM-S), RPMA Management Division, Directorate of Facilities Engineering.

POC NAME: John E. Lynn, Lu A. Lillie, or George Cromwell

POC TELEPHONE #: CIV (703) 664-6466, MIL AV 354-6466

## **PROBLEM OR ISSUE: Cost Contracting**

### **SOURCE DOCUMENT:**

**U.S. Army Audit Agency Report MW 90-4, dated 14 Feb 90, on acquisition and contract administration**

A recent U.S. Army Audit Agency report found that unexplained cost increases (contractor reimbursed at higher rates than negotiated) in a cost type contract were not adequately administered. Contracting personnel did not review costs billed on the installation support cost type contract to determine reasonableness before payment, nor were the contractor's performance and billings monitored to ensure that total estimated costs were not exceeded. Reimbursement in excess of reasonable cost, in this case, was possibly as high as 9 percent. The government's monitoring of quality was insufficient.

There is a misconception that cost type contracts are easy to administer and that the government will reimburse all costs, at any performance level. It is also erroneously perceived that contract changes are fewer with a cost contract than a fixed-price contract. The facts are that a cost contract should have the same number of changes as a fixed-price contract might have and contract administration should occur at a level at least equal to that required for a fixed-price contract.

The Federal Acquisition Regulation (FAR) 16.202-1 states that firm fixed-price contracts impose a minimal administrative burden upon the contracting parties. The contract administration for a cost contract must include monitoring performance, productivity, unit costs, and quality to ensure that billed costs are reasonable.

### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Determine whether all or part of the work could be acquired on a firm fixed-price contract rather than a cost contract. Cost contracts are often justified by the belief that the work or workload cannot be identified for a fixed-price contract. The Army does not have a problem with workload identification when a single functional area is contracted.
- Look for more ways to use fixed-price contracts.

- Consider smaller contracts; job order contracting for small- and medium-size maintenance, repair, and construction projects; and unit task pricing in any function that has identifiable tasks with variable requirements.
- Remember that FAR 16.301-2 states that "Cost reimbursement contracts are suitable for use only when uncertainties involved in contract performance do not permit costs to be estimated with sufficient accuracy to use any type of fixed-price contract."

PROPOSER OFFICE FOR ISSUE OR POLICY: Installation Services Branch, RPMA Management Division, Directorate of Facilities Engineering

POC NAME: John Lynn

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## **PROBLEM OR ISSUE: Government's Workload Data Requirements**

### **SOURCE DOCUMENT:**

**U.S. Army Audit Agency Report S088-203, dated 16 Jun 88, on contractor operations of commercial activities (CA) base support contract**

A recent U.S. Army Audit Agency report found that an installation had failed to maintain current, updated workload inventories. Performance work statements did not adequately ensure that projected savings would be realized as a result of contracting out the base support functions. Workload data were neither accurate nor complete, due in large part to the lengthy delay between the time the performance work statements (PWSs) were developed and the contractor began work. The PWSs were also written in general or ambiguous statements. As a result, the contract required a major modification, costing more than 70 percent of the original proposal for the base year. This case reinforces one of the earliest CA lessons learned by DEHs—the success of a CA cost study, whatever the outcome, depends on the quality of the PWS.

Federal acquisition policy prefers that the government prepare the PWS to support a firm fixed-price contract. The PWSs were developed for a firm fixed-price contract using actual workload data, but by the time the contract was finally awarded, the workload data were no longer accurate or complete. The incomplete workload more readily supported a cost or reimbursement type contract.

Prior to the contractor's start date, a major modification to the contract was initiated, which changed several thousand pages of the basic contract and incorporated about 274 changes in the PWSs. Most of the changes in the PWSs resulted from the changing requirements of the command.

However, other changes resulted because the original scope of work was incomplete.

No agreement could be reached with the contractor regarding the value of the increased scope of work prior to the contract start date. The contractor started work under a firm fixed-price contract and was also given an unpriced order not to exceed \$25 million for the increased scope of work. The contractor's incurred costs eventually were used as the basis for negotiating a settlement of about \$18.4 million for the work performance under the unpriced order.

The settlement of the first year's additional effort formed the basis for pricing the remaining and option years. Incorporating the modification into the contract base year and the option years resulted in increasing the estimated cost of the contract by about \$92 million.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Establish and ensure a system that can update the PWSs when changes in the workload occur during the lengthy CA review process or during contractor performance.
- Remember that the final PWS is often convoluted and incomplete. Therefore, design a system that will help prepare PWSs in a manner that identifies specific measurable units (tasks or outputs) where possible, so that unit costs can be applied to workload changes.
- Award the appropriate type of contract for real property maintenance activities that is consistent with the contract requirements.
- Remember that workload data are critical during PWS preparation, during CA review process, and during contractor performance. An accurate historical workload data base will provide the installation with a work trend analysis that can be compared with the current workload.
- Use the results of the analysis to identify workload uncertainties such as increases or decreases in workload, descriptions of workload, and changing requirements in the installation's mission.
- Remember, the greater the effort given to preparing the PWS, the better the probability of an in-house decision from the cost comparison.

PROPOSER OFFICE FOR ISSUE OR POLICY: Installation Services Branch, RPMA Management Division, Directorate of Facilities Engineering

POC NAME: Bob Hohenberg

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## PROBLEM OR ISSUE: Government Estimates

### SOURCE DOCUMENT:

U.S. Army Audit Agency Report EU 89-A1, dated 7 Oct 88, on engineering operations

Independent government estimates were not supported and could not be used to evaluate the reasonableness of contractors' proposals. No documentation was available to show the rationale, sources, and computations used to prepare the estimates in 216 contracts audited in 11 military communities.

Government estimates were revised arbitrarily to fall within an acceptable range of the proposed contract award price. Of the 216 contracts audited, 90 varied by more than 15 percent from the lowest contract proposal. Variances ranged from 322 percent to 159 percent below the proposed award price. All 90 estimates were revised to fall within the acceptable 15 percent variance range with no supporting documentation.

Government estimates for contract modifications were based on unverified, contractor-provided pricing data even though they varied as much as 100 percent from the original government estimate. Basing modification estimates on contractor pricing data could result in unbalanced bidding by knowledgeable contractors and higher overall costs to the government. As a result, military communities could not be sure they were getting the needed services at fair and reasonable prices.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Require estimators to document sources and computations used in preparing estimates and establish a central library of catalogs and data for estimating material and labor costs.
- Require estimators to document their rationale for revisions made to estimates returned by the contracting officer. The documentation should show the inaccurate line items, errors in computations or sources, and methods used to prepare the revised estimate.
- Base modification estimates on current verifiable pricing data rather than on unverified contractor-provided data.

POC NAME: George Cromwell

POC TELEPHONE #: CIV (703) 664-6466, MIL AV 354-6466

## **PROBLEM OR ISSUE:** **Contract Administration Plan**

### **SOURCE DOCUMENT:**

**U.S. Army Audit Agency Report MW90-2, dated 22 Dec 89, on acquisition and contract administration**

A recent U.S. Army Audit Agency report found that contract administration was not fully effective and that there was little assurance that full value was received on service and construction contracts. The root cause of these weaknesses was a lack of communication and coordination between the Director of Contracting (DOC) and DEH personnel. The DOC had failed to take the lead in establishing and ensuring proper contract administration procedures, and no formal contract administration plan was in effect.

The following problems were identified:

- DEH personnel did not have the contractor's quality control (QC) plans.
- Contractors were not required to submit QC plans.
- DOC personnel were not aware that detailed surveillance plans were needed.
- No contract administration plan was available for reviewing the adequacy of inspections and DEH personnel training.
- Inspection procedures and forms were incomplete.
- DOC personnel did not coordinate effectively with the functional activities.
- DEH inspectors were inadequately trained.
- DOC had not issued guidance on the inspection information desired.

### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Develop contract administration plans—one plan for each service contract and one plan that would apply to all construction contracts.
- Consult AR 5-20 for guidance in developing a contract administration plan and defining roles and responsibilities.
- Take the initiative in drafting the contract administration plan because it is important that functional relationships are identified properly. The contracting officer is responsible for the contract administration plan and will welcome the DEH involvement.
- Remember that when no formal contract administration plan exists, contract performance will suffer significantly.
- Consult EHSC publication S-31 for guidance in developing a DEH contract administration plan.

**PROPONENT OFFICE FOR ISSUE OR POLICY:** Installation Services Branch, RPMA Management Division, Directorate of Facilities Engineering

**POC NAME:** John Lynn

**POC TELEPHONE #:** CIV (703) 664-6466, MIL AV 354-6466

## **PROBLEM OR ISSUE:** **Contract Administration**

### **SOURCE DOCUMENT:**

**U.S. Army Audit Agency Report MW 90-2, dated 22 Dec 89, on acquisition and contract administration**

Administration of service and construction contracts was not fully effective. Contractors did not submit quality control (QC) plans. Detailed surveillance plans were not prepared for service contracts. DEH inspectors were inadequately trained in service contract administration. Inspection procedures did not ensure contractors' work met contract specifications.

Directorate of Contracting (DOC) personnel were not fully informed of the contractors' performance. The reports only generally stated the work being done and the number of people working. Inspection reports contained few, if any, documented problems with quality.

### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Obtain, review, and provide contractor QC plans.
- Develop and use detailed surveillance plans for service contracts.
- Require inspectors to use the forms provided in DA guidance when inspecting service contracts.
- Prepare the contract administration plans for DOC personnel to use in evaluating the functional activity's inspection of service contracts.
- Train functional activity inspectors in service contract administration.
- Establish procedures for documenting government quality assurance actions for construction contracts.
- Require inspection of work in progress, develop and use checklists, and use numbered inspection reports.
- Institute controls to ensure that inspection reports are submitted to the DOC and that detailed inspection results are prepared and reported in accordance with specific criteria.

**POC NAME:** George Cromwell

**POC TELEPHONE #:** CIV (703) 664-6466, MIL AV 354-6466

## **PROBLEM OR ISSUE:** **Managing Interior Repair and Painting Contracts**

### **SOURCE DOCUMENT:**

**U.S. Army Audit Agency Report MW 90-2, dated 22 Dec 89, on acquisition and contract administration**

Records detailing the work requested, inspected, and accepted on an interior repair and painting contract during a recent 15-month period were missing. Without these

records, no determination could be made as to whether the contractor actually performed the work. Inadequate internal controls permitted payments for work not done.

Inspectors did not fully determine whether the completed repairs and painting met contract specifications. Adequate separation of duties did not occur in assigning work and approving payments. The DEH inspector assigned the work to the contractor, inspected and accepted the contractor's work, verified the contractor's invoice by comparing the record of work assigned and accepted with the invoice, and submitted the forms to the Directorate of Contracting (DOC), which authorized the payments to the contractor.

The interior measurements of family housing quarters shown in the solicitations and resulting contracts were overstated by an average of 22 percent. As a result, full value was not being received for the total annual payments of about \$1 million made to repair and paint the interiors of family housing quarters.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Require the contractor to furnish records supporting all work done.
- Require separation of duties for interior repair and painting contracts. Do not allow the same individual to assign work, accept work, verify invoices, and approve payments.
- Number the work orders given to the contractor to reform work.
- Use detailed checklists that fully document the deficiencies found during inspections.
- Determine accurate interior measurements for quarters to be painted.

POC NAME: George Cromwell

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### **PROBLEM OR ISSUE: Service Contract Requirements**

#### **SOURCE DOCUMENT:**

**U.S. Army Audit Agency Report EU 89-A1, dated 7 Oct 88, on engineering operations**

Communities paid too much for services because contract requirements were not accurately determined. Three communities paid (at least \$560,000) more than necessary for painting and floor refinishing. Inaccurate quantity estimates were listed in the requests for proposals (RFPs), which allowed incumbent contractors to submit unbalanced proposals (increasing unit prices for items they knew were underestimated and decreasing unit prices for items they knew were overestimated).

Two other communities paid (at least \$326,000) more than necessary for painting and custodial services because contracts included unneeded requirements. Cleaning and two coats of paint were ordered in all areas even though no cleaning and one coat of paint would have been sufficient in some areas. Custodial contract requirements were overstated because they specified too-frequent cleaning intervals (such as requiring daily cleaning in buildings that were not used every day).

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Develop a data base of actual work performed for service contracts and use it to prepare quantity estimates for future RFPs.
- Base service contract requirements on physical inspections and available guidance regarding the frequency and scope of services.

POC NAME: George Cromwell

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### **PROBLEM OR ISSUE: Contractor's Quality Control**

#### **SOURCE DOCUMENT:**

**U.S. Army Audit Agency Report S089-23, dated 21 Aug 89, on quality assurance (QA) for facility engineering services**

The adequacy of a government QA surveillance program for facilities engineering services was impaired because the contractor's quality control (QC) plan was not adequate and could not be used to determine the extent of surveillance required to monitor contractor performance.

A recent U.S. Army Audit Agency report found that an installation had not enforced the contractor's QC plan. Federal acquisition policy requires contractors to obtain government approval of their QC plans prior to starting work.

The QC plan had not been fully developed before the contractor started work, and the contracting officer allowed the contractor to commence contracted services before submitting a QC plan. This decision was made on the basis of an agreement with the contractor that facilities engineering services would be consolidated in the approved QC plan for an existing services contract. The QC plan was submitted for approval 27 months after the contractor began work.

The U.S. Army Audit Agency's review showed that the plan lacked necessary inspection information such as: specific identification of all services to be inspected, frequency of inspections, and whether inspections were to be scheduled or unscheduled. No inspection checklists had been prepared. As a result, there was little assurance that contract requirements were met in a satisfactory manner,



and government surveillance personnel were unable to use the contractor's QC plan to determine the extent of contract surveillance required.

Moreover, contractor personnel stated that none of the government's QA personnel had reviewed the QC plan during the 27 months that the contract had been in effect. Because the contractor had not implemented an effective QC plan, the government's assurance that satisfactory services were being performed was substantially reduced.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Ensure that the contractor has a QC plan approved and implemented within a specified time before the contractor starts work.
- Establish local procedures to ensure QC provisions are implemented.
- Make sure all changes to the QC plan receive government approval before the contractor implements the plan.
- Be sure QC files and records are made available to government personnel to determine whether to reduce adjust (reduce or increase) the amount of government surveillance during the contract period.

PROPONENT OFFICE FOR ISSUE OR POLICY: Installation Services Branch, RPMA Management Division, Directorate of Facilities Engineering

POC NAME: Bob Hohenberg

POC TELEPHONE #: CIV (703) 664-6466, MIL AV 354-646

### PROBLEM OR ISSUE: Quality Assurance

#### SOURCE DOCUMENT:

U.S. Army Audit Agency Report SO 89-23, dated 21 Aug 89, on quality assurance (QA) for facility engineering services

Surveillance of the facilities engineering services contract was inadequate because the contractors' quality control (QC) plan was inadequate and government QA personnel could not use the plan to determine the extent of surveillance required. Work was started 27 months before the plan was submitted. Inspections were not made in accordance with the QC plan, and inspections were not sufficiently documented because of inadequate training.

QA personnel did not evaluate the contractor's performance against established work standards. An effective customer complaint program had not been established. Because the acceptability of the contractor's work could not be determined, the Army may have paid for services that were of unacceptable quality.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Establish procedures for ensuring that contractors develop and submit comprehensive QC plans for government approval before work commences.
- Direct QA personnel to implement all provisions of the QC plan for the facilities engineering contracts—specifically, perform all required inspections, use proper random sampling techniques, and evaluate completed tasks against established labor work standards.
- Make certain that QA personnel document all contract surveillance work in sufficient detail to support payments.
- Direct the contracting officer to review and evaluate periodically the documentation and surveillance methods used by contract surveillance personnel.
- Ensure that all QA personnel are properly trained.
- Establish a customer complaint system and provide each customer with written instructions on the system's use and where to route complaints.

POC NAME: Bob Hohenberg

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### PROBLEM OR ISSUE: Contract Inspection Procedures

#### SOURCE DOCUMENT:

U.S. Army Audit Agency Report SO 89-A1, dated 30 Jun 90, on installation contract administration

No adequate inspection practices had been implemented to monitor contractor performance effectively. Required inspections were not always performed in 25 of 28 contracts audited or, if performed, did not cover all critical aspects of contractor work. In eight of the contracts, no documentation was available to indicate that any of the inspections had been performed. Inspection reports did not contain essential information about the inspections. When inspections were made and documented, identified performance problems were not always reported to the contracting officer. Hence, appropriate actions were not taken to require contractors to correct work or to reduce contractor payments.

These problems occurred because not enough contracting officers' representatives (CORs) and inspectors were available to inspect the contractors' work. The CORs were not trained or supervised adequately to perform their duties.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Assign enough CORs and inspectors to monitor contracts effectively. When surveillance functions are added to other assigned duties, ensure the staff member has adequate time perform all aspects of his or her job properly.

- Ensure that CORs are familiar with the specific performance requirements stated in the contracts for which they are responsible.
- Direct CORs to perform and document all prescribed inspections of contractor performance.
- Direct CORs to report all identified performance problems to the contracting officers.
- Provide CORs with detailed instructions and training on inspection techniques.

POC NAME: Bob Hohenberg

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### **PROBLEM OR ISSUE: Contractor Performance and Payments**

#### **SOURCE DOCUMENT:**

- U.S. Army Audit Agency Reports EU 89-A1, dated 7 Oct 88, on engineering operations
- SO 89-A1, dated 30 Jun 89, on installation contract administration

Adequate procedures had not been implemented to review and approve contractor invoices and to assess penalties for inadequate performance or uncorrected deficiencies. Contracting officers approved invoice payments without sufficient documentation to verify that services were performed properly.

Inspection reports and other documentation, such as contractor deficiency reports, did not always contain sufficient information to support deductions from contractor payments or were not provided to the contracting officer. Inspection reports were not translated from German to English.

As a result of inadequate procedures, contractors were paid for services that were either not performed at all or not performed in accordance with contract requirements.

#### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Ensure contracting officers obtain and review inspection reports before approving contractor's invoices for payment.
- Screen inspection reports and other contract documents that are written in a foreign language, and as a minimum, translate those items that indicate potential problems in contract performance. Place the translation in the official contract administration files.
- Establish procedures for government inspections that identify specific intervals for inspections on the basis of critical performance dates.
- Direct the contracting officers' representatives to prepare detailed deficiency reports for all instances of unsatisfactory performance.

- Ensure that deficiency reports are submitted to the contracting officers in a timely manner.
- Reduce the contractor's payments for all instances of uncorrected deficiencies.

POC NAME: George Cromwell

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### **PROBLEM OR ISSUE: Contract Modifications**

#### **SOURCE DOCUMENT:**

U.S. Army Audit Agency Report SO 89-A1, dated 30 Jun 89, on installation contract administration

Controls were inadequate for ensuring proper and timely processing of contract modifications, which were initiated as supplemental agreements. Contractors were improperly allowed to proceed with modified work on 70 percent of the modifications before final prices were established. Excessive delays (average of 123 days, maximum of 675 days) were experienced in finalizing the prices for the agreements. The contract files did not include adequate documentation to support the final prices established for the agreements. Only about 12 percent of the modifications had complete price negotiation information. The modifications increased the original contracts by \$4.4 million (24 percent).

#### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Establish final prices on contract modifications before allowing contractors to start work. When emergencies or other unusual circumstances preclude the establishment of final prices, ensure that the contract files are annotated to explain the reason.
- Develop a suspense system to monitor the status of requests for price proposals. Initiate follow-up actions when unusual delays are experienced in obtaining proposals from contractors. Direct the contracting officers to conduct negotiations promptly upon receipt of contractor proposals.
- Issue unilateral modifications when excessive delays are experienced in obtaining contractor proposals and in negotiating and finalizing modifications.
- Ensure that contract files include complete documentation to support negotiated prices for modifications. This should include the contractor's proposal, the independent government estimate, the negotiated price, and an explanation of any variances between the estimate and the negotiated price.

POC NAME: George Cromwell

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# Lessons Learned: Technical Operations

## LESSONS LEARNED FROM AUDITS AND INSPECTIONS

### PROBLEM OR ISSUE:

#### Construction misclassified as repair and maintenance

#### SOURCE DOCUMENT:

- Work Classification—U.S. Army Audit Agency (USAAA) Draft Report MW 90-10, Funding for Minor Construction, U.S. Army Engineer Center and Ft. Leonard Wood, MO
- USAAA Audit Report EU 90-309, 5 Mar 90, Subject: Facility Management, U.S. Army, Europe and Seventh Army
- USAAA Draft Audit Report SW 90-XX, Subject: Renovation and Repair Projects, Fitzsimons Army Medical Center, Aurora, CO
- USAAA Audit Report MW 89-704, Subject: Renovation Contract for Bldg. 77, Ft. Knox, KY

In reviewing DEH contract work, USAAA often finds reason to suspect that construction work has been misclassified as repair or maintenance work, resulting in a statutory violation of the operations and maintenance, Army minor construction limitation.

If work is being performed solely to bring facility components up to current standard, functional requirement, or code, then the work must be classified as construction.

If existing components of a facility have failed or are failing and require repair, then those components may be repaired to current standard, functional use, and code.

In many instances reviewed by USAAA, maintenance and repair work may have been properly classified, but the project folder contained little or no documentation to justify the classification of the work as maintenance or repair.

Lacking documentation to substantiate the failed or failing condition of existing components, USAAA found construction had been misclassified as repair.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Be sure project files contain documentation to substantiate how project work was classified as maintenance, repair, or construction.
- Be sure the project folder contains a memorandum for the record, or other clear explanation, written at the time the work classification determination was made, that clearly delineates how components to be repaired were failed or failing.

- Avoid terms such as "upgrade," "renovate," "rehabilitate," or "install" when describing repair work. Good photographs that document failed or failing conditions may be helpful.
- Make an honest effort to classify work properly.

PROPOSER OFFICE FOR ISSUE OR POLICY: Installation Programming & Policy Group, Bldgs and Pavements Div, Dir Fac. Engr., EHSC

POC NAME: Helmut Gramberg, c/IPP Gp. CEHSC-FB-I

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### PROBLEM OR ISSUE:

#### Facilities Engineering (FE) Supply Operations

- Consolidation of the FE supply function under the management of Director of Logistics (DOL) was tested at Fort Bragg, North Carolina, during the late 1980s. No savings were identified.
- Army Materiel Command (AMC) has been functioning for many years using a DIS (Director for Installation Services) that combines DEH and DOL supply. This concept functions best at small installations.
- A series of U.S. Army Audit Agency reports identifies excess end items as well as shop stock items. The rigid application of established stockage objectives has resulted in the turn-in and subsequent reorder of the same item.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Be sure that installation-level managers become actively involved in the decision to consolidate and retain excess.

PROPOSER OFFICE FOR ISSUE OR POLICY: Installation Programming and Policy Group, Buildings and Pavement Division, Dir. Fac. Engr., EHSC

POC NAME: Walter Seip, CESHSC-FB-I

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**PROBLEM OR ISSUE:**  
**DEH Equipment Replacement/  
Procurement Programs**

- The U.S. Army Audit Agency's usage guidances are considered to be absolute. Cost avoidances are computed on items adjudged as excess.
- Since 1986, the Army has decided not to fund the replacement of nonstandard equipment items. However, because almost all DEH equipment is nonstandard, installation equipment is deteriorating.

**RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Make every effort to maximize equipment reimbursement; otherwise, the installation must fund such items as repairs of on-hand equipment, short-term rentals, and leases.
- Remember that procurement funds are generally not available. Therefore, investigate Productivity Enhancing Capital Investment Programs (PECIPs) such as QRIP (quick return on investment program) and DOD's PIF (productivity investment funds) as possible sources of funding.

PROPOSER OFFICE FOR ISSUE OR POLICY: Installation Programming and Policy Group, Buildings and Pavement Division, Dir. Fac. Engr., EHSC

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**PROBLEM OR ISSUE:**  
**Emergency power needs**

**SOURCE DOCUMENT:**  
**U.S. Army Prime Power Program (P3)**

DEH needs electric power generators for emergencies such as power outages or back-up power to critical facilities such as hospitals.

**RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- For emergencies, call EHSC's Directorate of Prime Power and Emergency Operations to obtain responsive utility grade power from EHSC's military detachments and their mobile generators.
- To obtain back-up power to critical facilities through P3, call EHSC's Directorate of Prime Power and Emergency Operations.

PROPOSER OFFICE FOR ISSUE OR POLICY: Directorate of Prime Power and Emergency Operations, USAEHSC

POC NAME: Michael A. Stollmeyer, Director

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**PROBLEM OR ISSUE:**  
**Corrosion control**

**Compliance with Corrosion Control Regulations Is Low**

- Extensive improvements are required at the installations in order to comply with corrosion control policies and regulations.
- Of the 30 installations surveyed between FY85 and FY90, none complied with all corrosion control policies and regulations.

**RECOMMENDED RESOLUTION OR LESSON LEARNED:**

**Testing and Maintenance Are Required**

- Routine testing, repair, and record keeping are required to operate cathodic protection systems.
- Routine testing and adjustment of industrial water chemistry are required to operate industrial water systems.

**Program Evaluation**

- Corrosion control program improvements are most effectively implemented by performing a comprehensive corrosion reduction survey and evaluation, which is available through the proposer office.

**Corrosion Control Practices Enhance Safety**

- The Natural Gas Pipeline Safety Act and Army policy require extensive corrosion control of underground gas distribution systems to reduce the potential risk of fire and explosion.
- EPA and Army regulations require extensive corrosion control for underground storage tanks to reduce the risk of release of hazardous materials.
- Industrial water treatment is required to prevent failure of steam generating and handling facilities and to reduce the risk of Legionnaire's disease.

**Corrosion Control Practices Conserve Resources**

- The cost-benefit ratio for installing, operating, and maintaining cathodic protection systems is typically very favorable. Economic factors can be calculated according to National Association of Corrosion Engineers Recommended Practices (NACE RP 0272-27).
- Cathodic protection reduces funds and manpower required for repairs and replacements.
- Installation costs for cathodic protection systems are low and normally represent between 1 and 5 percent of the total project costs.
- Industrial water treatment methods that are used to control corrosion and scale formation inhibit the heat transfer efficiency of insulating scale.

- Automated chemical feed and blowdown systems improve chemical control and reduce manpower requirements. Automated systems are justified for high-pressure and steel low-pressure steam boilers; cooling tower systems with a capacity greater than 50 to 100 tons; and hot water heating, chilled water, or dual heating/cooling systems with high make-up rates.
- Private sector utilities use cost-effective corrosion control techniques extensively. This contrasts sharply with the Army's poor use of corrosion control techniques.

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## **PROBLEM OR ISSUE: Hazardous Material and Waste**

### **SOURCE DOCUMENT:**

- U.S. Army Audit Agency Reports SW 90-9, dated 27 Feb 90, on the management of hazardous material and waste
- SW 09-14, dated 1 May 90, on hazardous material and waste

The installation structure was not adequate to manage and perform the functions and responsibilities of the hazardous waste program effectively. Mission and functional responsibilities were not fully defined, responsibilities were assigned without establishing authority, and adequate coordination was not initiated. As a result, the installation was cited and fined for noncompliance with federal and state requirements.

The installation plan had not been properly prepared and had not been updated for more than 3 years. Several generation points were not properly identified. Training requirements were not identified. The Spill Prevention Control and Countermeasure Plan was not certified, not distributed to operating personnel, and did not identify all possible sites.

Waste oil was not adequately managed. Berms were not properly constructed around the storage area, wire mesh screens were not used in storage tanks, and storage sites were not consolidated.

No system had been developed to track the movement and disposal of hazardous material. Waste analysis was not performed in a timely manner. Safety measures were not adequately communicated or enforced. Personnel were not adequately trained in hazardous material handling.

The Army Internal Control Program was not effectively managed.

## **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Evaluate the organizational structure for managing hazardous material and ensure that personnel assigned have authority to enforce compliance. Establish command lines to centralize responsibility. Develop management structure at the unit level to oversee use and disposal of hazardous waste.
- Conduct an initial hazardous waste inventory. Establish an automated data base.
- Use that information to develop a plan and to update it annually.
- Review and update the Spill Prevention Control and Countermeasure Plan and have the plan certified by a registered professional engineer.
- Develop and implement a system to track the movement and disposal of hazardous material.
- Maintain records.
- Ensure all personnel who manage, use, store, and dispose of hazardous material receive required training. Compile and maintain list of job titles that require training.
- Require managers to complete the Solid and Hazardous Waste Management Internal Control Review Checklist. Review the list semiannually until weaknesses are corrected.

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## **PROBLEM OR ISSUE: Refuse Collection**

### **SOURCE DOCUMENT:**

- U.S. Army Audit Agency Report EU 89-A1, dated 7 Oct 88, on engineering operations

Refuse collection operations were not managed effectively. Refuse collections were scheduled too frequently because container fill levels were not monitored adequately. The normal standard frequency for family quarters and administrative facilities is once a week; but in the communities reviewed, collections were often scheduled three times a week. The assumption was that all containers would be completely full at each pickup, but this was never monitored. Actual observation indicated that 60 to 80 percent of the containers were less than half full.

Established routes were not followed by the refuse crews. Itinerary analysis for four refuse crews at one community showed that only 23 percent of the daily collections matched established collection routes. Hence, some containers were emptied more than once per day while others on the schedule were not emptied.



Engineered performance standards were not used to estimate labor requirements. Hence, labor requirements for refuse collection were over estimated. Analysis indicated that refuse collection labor estimates were made to match the available time of the authorized number of refuse collection staff rather than actual requirements.

Contracted refuse services were not managed effectively. Contract specifications were not accurate, so contractor performance could not be evaluated. Improved refuse collection management would reduce costs by reducing labor and equipment requirements.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Base refuse collection requirements on analysis of actual container fill levels, and schedule collections accordingly.

## Lessons Learned: Planning and Real Property

### LESSONS LEARNED FROM AUDITS AND INSPECTIONS

#### PROBLEM OR ISSUE: Space Management

**SOURCE DOCUMENT:**  
U.S. Army Audit Agency Report EC 87-A1, dated 10 Dec 86, on installation facility management

Annual installation-wide space-use surveys either were not performed or were performed ineffectively. Four installations reviewed had not conducted an installation-wide space-use survey. Another installation had started but had only completed reviews of 292 out of 650 buildings. The surveys that were completed were of questionable value in identifying excess space because the surveys were prepared by the buildings' occupants.

The audit identified 3,200 unaccompanied soldiers at the grade of staff sergeant or below who were living off post although quarters were available. The annual cost to the Army is at least \$6.6 million.

Information on installation facilities was not accurately maintained in the IFS. Significant differences existed between actual and reported building use. At one installation, 52 percent of the temporary building space

- Require refuse crews to follow established collection routes. Direct supervisors to observe collections periodically to make sure schedules are followed.
- Use available engineered performance standards to estimate labor hour requirements for refuse collection.
- Update refuse collection contract specifications to reflect approved changes in container locations.
- Perform an economic analysis that compares contracted costs with in-house refuse collection services, and select the more cost-effective alternative.
- Update and revise refuse collection contracts annually.

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designated as troop housing was used primarily for office and storage space.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Update facility inventory records annually on the basis of results of installation-wide space-use surveys.
- Make sure that the space-use surveys specifically look for, identify, and report on unused or underused space.
- Use the results of space-use surveys to consolidate units and activities into less space, to meet acceptable usage criteria, and to minimize requirements for existing or new facilities.
- Have installation space managers determine the validity of soldiers' requests to live off post and certify only those requests that are valid before authorizing payment of housing allowances.
- Require facility managers to keep up-to-date and accurate usage data in the IFS.

POC NAME: Gay Tissaw

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## Lessons Learned: Housing

### LESSONS LEARNED FROM AUDITS AND INSPECTIONS

#### PROBLEM OR ISSUE: Family Housing

**SOURCE DOCUMENT:**  
U.S. Army Audit Agency Report  
EC 90-202, dated 16 Feb 90, on family housing

The procedure used to calculate family housing requirements was not effective, resulting in unneeded family housing acquisition programs totalling \$577.8 million. A 4,900-unit build-to-lease authorization (estimated to cost more than \$1.1 billion) was questioned because the installation overstated housing deficits. One installation overstated its requirements by 655 units because the requirements were not adjusted for 1,310 personnel who were married to each other and collocated at the installation.

About 44 percent of the family housing units painted in FY88 were painted more frequently than recommended, and three installations sanded and refinished hardwood floors more frequently than recommended. Installations incurred excessive contract cleaning costs because contractors performed cleaning duties that should have been the responsibility of the occupant and cleaned housing units when soldiers moved for their own convenience.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Establish procedures for distributing by grade the strength figures contained in the Army Stationing and Installation Plan.
- Develop marriage factors by grade using the Standard Installation/Division Personnel System.
- Segment housing units by number of bedrooms.
- Reduce projected housing requirements for soldiers married to other soldiers who are collocated at an installation.
- Exclude vacant rentals from market area penetration rate computation.
- Implement self-help programs.
- Follow established guidelines for cyclic work; investigate the causes and document the need for out-of-cycle work.
- Have separate line items in all family housing maintenance contracts for hardwood floor sanding and refinishing.
- Review family housing maintenance contracts and delete occupant responsibilities from the statements of work.

- Develop the capability of tracking and analyzing downtime between occupancies.

PROPOSER OFFICE: Army Housing Office (CEHSC-HS-S)

POC NAME: Marlene Naranjit

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#### PROBLEM OR ISSUE: Troop Housing

**SOURCE DOCUMENT:**  
U.S. Army Audit Agency Report HQ 90-A1, dated 11 Jun 90, on troop housing

Housing managers did not accurately compute troop housing requirements. They did not use the Army Stationing Plan when determining projected personnel strength and did not include only eligible personnel in their computations. Specifically, troop housing was programmed for senior enlisted soldiers E7 and above, marriage factors were developed on an overall basis rather than by grade, and trainees were included in the calculations. Trainees should have been calculated separately because they are authorized less space.

Housing managers did not accurately identify and report the number of barracks and private sector units available for use. They did not include barracks that had been diverted or were awaiting conversion as available assets. They did not survey troop units annually, update real property records, or use the segmented housing market analysis to identify private sector units.

Housing managers did not have adequate control over barracks to make sure they met occupancy goals.

Engineering personnel did not properly classify the condition of barracks, and housing managers did not conduct economic analyses to determine the best alternative for modernization projects.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Use the latest Army Stationing Plan to identify the projected number of personnel assigned to the installation.

- Use the Standard Personnel System to establish percentages for distributing personnel strength by grade and for developing marriage factors by grade.
- Survey troop housing assets annually, update real property records, and use updated records to compute troop housing requirements.
- When preparing housing requirements report, use the segmented housing market analysis to identify housing units available in the private sector.
- Make sure troop housing is centrally managed.
- Do not assign barracks to geographical bachelors, while single soldiers in grades E6 and below reside in private sector housing.
- Do not issue statements of nonavailability when the occupancy rate is below 95 percent.
- Prior to approving any modernization project, determine that barracks have been classified properly and an economic analysis of alternatives has been performed.

### **PROBLEM OR ISSUE: Transient Housing Service Charges**

AR 21-50 outlines the formula for computing the service charges for operating and maintaining TDY and guest house facilities. The computation should be based on the projected occupancy of each facility and the amount of revenue necessary to operate and maintain the facility, as well as the program for improvements that are not supported with appropriated funds. The computation formula is intended to ensure that service charges are not inflated but rather are sufficient to provide adequate facilities and services. A General Accounting Office (GAO) audit revealed that service charges are not being computed according to regulatory guidance, and funds for facilities use are being mismanaged.

#### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Evaluate the transient housing operations to determine whether the operations comply with regulatory guidance.
- Emphasize maximum use of facilities, appropriate (not extravagant) amenities and furnishings, and accurate computation of service charges.
- Ensure that the revenue generated from billeting operations is used to support those facilities and not to supplement other nonappropriated fund instrumentalities on the installation.

PROPOSER OFFICE FOR ISSUE OR POLICY: Army Housing Office (CEHSC-HM-A)

POC NAME: Sherri O'Keefe and Lana Portell

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### **PROBLEM OR ISSUE: UPH Management**

SOURCE DOCUMENT: U.S. Army Audit Agency, **Troop Housing Audit Report SO-89-204**

Recent U.S. Army Audit Agency reviews of troop housing identified areas where installations inefficiently managed unaccompanied personnel housing (UPH) inventory assets, and the programming for new construction and modernization. Major deficiency encompasses several areas:

- Inconsistencies in real property inventory reporting
- Improper use of conversions and diversions
- Improper classification of UPH adequacy
- Discrepancies in requirements programming (such as personnel categories and strengths)
- Underuse of on-post UPH assets
- Failure to identify off-post UPH assets

#### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

The audit report identified the need for MACOM and installation DEHs to conduct close and constant surveillance of these areas. Policy guidance being published in the new AR 210-50 provides the remedies when they are properly applied. This will not only conserve military construction, Army (MCA) dollars, but will also result in savings of basic allowance for quarters and travel costs.

PROPOSER OFFICE: Army Housing Office

POC NAME: Ted Lipham

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### **PROBLEM OR ISSUE: Excessive vacancy rates**

SOURCE DOCUMENT: U.S. Army Audit Agency (USAAA) Audits (EC 90-202, SW 89-21-, EC 89-207)

Housing managers did not identify and correct avoidable delays in the assignments and termination process to ensure the Army's vacancy rate goal was met. Housing managers did not effectively make pretermination inspection, identify and schedule maintenance requirements, establish projected availability dates, or notify new occupants in a timely manner.

#### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Establish an automated data base system—the Housing Operations and Management Systems (HOMES) satisfies this recommendation.
- Coordinate maintenance work and assistance from unit commanders in scheduling termination inspections.



PROPOSER OFFICE: Army Housing Office (CEHSC-HS-S

POC NAME: Marlene Naranjit

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## **PROBLEM OR ISSUE: HOMES solves housing problems**

### **SOURCE DOCUMENT:**

AR 210-50, U.S. Army Audit Agency audits (EC 90-202, EC 89-207)

Fifty-eight percent of the all-volunteer Army is married, compared with an average of 42 percent during the draft years. Inadequate housing often impairs the quality of service life and hurts retention of valuable Army personnel.

Before HOMES, incoming soldiers and families had a long wait before being assigned adequate housing—disrupting their lives and costing the Army military personnel allowance funds. Meanwhile housing units either remained vacant and available or awaited maintenance and repair, cleaning, or inspection. Better automated housing information and management capabilities were needed.

Before HOMES, incoming soldiers sometimes spent excessive amounts of time in the housing office to process their applications.

Before HOMES, incoming transient unaccompanied personnel were often issued statements of nonavailability of quarters and issued funds for off-post lodging when transient quarters were either already available on post, or could have been made available if the necessary cleaning, maintenance and repair, and inspection had been scheduled.

Before HOMES, housing personnel sometimes had difficulty tracking the availability of family quarters after termination of occupancy. Occupancy rates were overreported, partly due to underreporting of excessive downtime for cleaning, maintenance and repair, and inspection.

### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Use the information and management capabilities of HOMES. Remember, however, that these resources must be used consistently to be of real benefit to housing management operations.
- Establish an automated data base and closely coordinate the work involved.
- Use the automated data base system to coordinate maintenance and repair, cleaning, and inspections in transient quarters operations (all of which HOMES provides). Increased reliance on the HOMES billeting module should improve operations and management.

PROPOSER OFFICE: Army Housing Office (CEHSC-HS-A)

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## **Lessons Learned: Environmental and Natural Resources**

### **LESSONS LEARNED FROM AUDITS AND INSPECTIONS**

## **PROBLEM OR ISSUE: Environmental Programs**

### **SOURCE DOCUMENT:**

U.S. Army Audit Agency Report EU 90-8, dated 2 Apr 90, on selected environmental programs

Plans for protecting the community's environment from hazardous substances were incomplete and based on other communities' plans rather than on the hazardous substances used in the community.

Hazardous substances were not properly stored and disposed of. Incompatible substances were stored together, substances were stored in inadequate facilities, and decontaminants were retained beyond their useful life. No comprehensive program was available to minimize waste. Scrap metal was recycled but other wastes were not, and no other methods of reducing wastes were used. No asbestos management program was effectively implemented, nor were buildings adequately tested for the presence of radon.

Many community environmental projects were not funded because the major command was relied upon to furnish supplemental funds, rather than budgeting funds for environmental projects.

The Internal Control Program was not fully effective because of lack of training.

**RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Conduct a one-time survey of all community activities and military units to obtain the necessary information to develop environmental plans. Identify all units generating hazardous waste within the community and identify buildings containing asbestos.
- Based on this survey information, develop a hazardous waste plan and a spill prevention and clean-up plan. Update these plans annually.
- Establish a comprehensive program for training community personnel in the proper handling, storage, and disposal procedures for hazardous substances.
- Advise all contractors working in the community of the presence of any asbestos in buildings.
- Place radon detectors in buildings that have not had levels measured accurately.
- Include environmental projects in the annual command operating budget.
- Develop and distribute a standard operating procedure for the Internal Control Program. Train each manager with internal control responsibilities.

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**PROBLEM OR ISSUE:  
Damage to training lands**

**SOURCE DOCUMENT:** Environmental impact statements (EISs), land acquisition, law suits, etc.

Many sensitive and fragile lands have been overused, often resulting in chronic impacts to the natural resources, high land maintenance costs, noncompliance, litigation, and constrained training.

**RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Balance Army mission activities with the land's ability to support long-term use.
- Ensure this balance by identifying the distribution and extent of sensitive areas and the durability of stable areas.
- Implement the Integrated Training Area Management program to manage training lands.

PROPONENT OFFICE FOR ISSUE OR POLICY: CEHSC-FN

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**PROBLEM OR ISSUE:  
Pest Control**

**SOURCE DOCUMENT:**

Department of Defense, Office of Inspector General Report No. 84-011, dated 10 Nov 83, on Department of Defense Pest Management Programs

Controlling minor household pests is a major task at many installations; however, many pest control treatments are being performed without verifying that a problem exists.

Many installations did not have pest management plans to identify and prioritize essential workload; to estimate the man-hours required to accomplish the workload; and to address the frequency, type, and location of pest control operations.

Installation pest management reports did not accurately reflect pesticide use, work accomplished, or staff productivity.

**RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Support self-help programs on the installation. Pest management items suitable for issue by self-help centers are described in Technical Note 420-76-1, 22 Sep 89.
- Ask certified pesticide applicators to demonstrate proper application techniques.
- Apply pesticides only when the presence of the pest has been verified and identified or when the MACOM pest management consultant has approved the procedure.
- Prepare an installation pest management plan to identify the essential workload; estimate the work force required; and describe the frequency, type, and location of control operations.
- Update the plan annually and have the installation commander and the MACOM pest management consultant approve the plan in writing.
- Be sure the Pest Management Report, DD Form 1532, reflects all pest management operations. The report is a consolidation of the daily record kept on DD Form 1532-1, Pest Management Maintenance Record.

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# Lessons Learned: USACE/DEH Support

## LESSONS LEARNED FROM AUDITS AND INSPECTIONS

### PROBLEM OR ISSUE: USACE Installation Support

#### SOURCE DOCUMENT:

Inspector General, U.S. Army Audit Agency, Green Ribbon Panel Matrix. Engineer Inspector General (EIG) follow-up inspection, engineering design and related procedures

A matrix is used to monitor the status of more than 120 issues surfaced by three separate evaluations of DEH support conducted in the mid-1980s. The EIG follow-up is the most recent effort to track improvements in design support issues. The following issues still need work:

- The cost of doing business.
- Transition from construction to operations and maintenance, including operations and maintenance manuals and training policy (guidance).
- An update of AR 420-10 addressing installation support policy.
- A system for evaluating installation support services.
- Installation support training.
- Resources for the installation support program.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

- Mutual cooperation among HQUSACE, Office of the Assistant Chief of Engineers, and EHSC is a necessary ingredient for success.
- Successes include: Job order contracting (JOC) fielding and training. Greater leadership emphasis on installation support. A DEH graduate program. Increased installation support capability among USACE divisions and districts. An installation support element staffed at HQUSACE. USACE policies, procedures, and capabilities for installation support effectively communicated through division and district DEH and Base Civil Engineer conferences, installation support guide books, and regular visits.

POC TELEPHONE #: CIV (202) 504-4804/4805, MIL AV 285-4804/4805

### PROBLEM OR ISSUE: MILCON Scoping, Programming, and Cost Estimating

#### SOURCE DOCUMENT:

Green Ribbon Panel Report, U.S. Army Audit Agency (USAAA) report on the military construction (MILCON) design release process.

Budgetary estimates accomplished during DD Form 1391 preparation are used to establish the program limit for MILCON projects long before design begins. Despite the preliminary nature of this estimate, it must be accurate and sufficient to provide the intended complete and usable facility. Inspections and evaluations found many examples of poor cost estimating on the preliminary project documents. The effect of this deficiency was to cause elements of the project to be dropped due to insufficient funds. Buildings were constructed without parking lots, drives, and walks. Barracks complexes were constructed without proper storm drainage or landscaping. Required demolition could not be accomplished as originally stated in the 1391. Entire buildings had to be dropped from renovation projects in order to meet costs. Army projects did not always meet the intent envisioned when they were initiated.

#### RECOMMENDED RESOLUTION OR LESSON LEARNED:

Army regulation 415-17 has been supplanted by an electronic data system, which is resident in the 1391 processor. The processor system is accessible by everyone in the Army who is assigned to prepare 1391s, and the cost data are updated regularly. Budgetary estimates have improved because the most current cost data for primary facilities are available to all preparers. Engineering Improvement Recommendation System Bulletins are used to cover changes to cost information that have not been incorporated into the processor. Increased MACOM participation in the 1391 review process has eliminated many of the deficiencies seen in earlier years. The major improvement needed is in the scoping and cost estimating of supporting facilities such as site clearing and grading, utilities connections, site improvements, parking, walks, exterior lighting, and landscaping.

PROPOSER OFFICE FOR ISSUE OR POLICY: CEMP-ES

POC TELEPHONE #: CIV (202) 272-1131, MIL AV 285-1131

## **PROBLEM OR ISSUE: Military Construction, Army Project Development**

### **SOURCE DOCUMENT:**

**Inspector General, U.S. Army Audit Agency (USAAA),  
Green Ribbon Report and USAAA report on military  
construction (MILCON) design**

Inspections and evaluations found that DD Forms 1391 were inaccurate in terms of cost, scope, and prospective occupants. Poor documentation caused many badly needed projects to be deferred or cancelled. MACOMs did not require project development brochures (PDBs) to support MILCON projects, and consequently, USACE districts had little or no advance knowledge of project scopes or requirements. In many instances, 1391s had been prepared without an approved site for the project.

### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Place increased emphasis on district-DEH coordination during preparation of DD Forms 1391. ECONPAK is one tool for economic justification of the project.
- Attend a PROSPECT course in 1391 preparation, which is presented several times a year at various locations.
- Remember that preparation of a PDB is now mandatory.
- Remember that the Computer-Aided Cost Estimating System is operational and gives the 1391 preparer access to the latest and most accurate cost information for primary facilities costs.
- Be aware that MACOMs are more active participants in the 1391 review process, including project siting, and will return poor quality documentation to the installation for re-preparation. MACOMs have also instituted their own project review boards that meet in advance of the annual program submission.
- Remember that HQUSACE is currently testing the concept of divisional level review of 1391s, which increases site inspections and cost verification prior to design initiation.

PROPONENT OFFICE FOR ISSUE OR POLICY: CEMP-ES

POC NAME: Marcel Drimer

POC TELEPHONE #: CIV (202) 272-1131, MIL AV 285-1131

## **PROBLEM OR ISSUE: Design Review Process**

### **SOURCE DOCUMENT:**

**Inspector General, U.S. Army Audit Agency (USAAA),  
Green Ribbon Panel Matrix. Engineer Inspector  
General (EIG) follow-up inspection, engineering  
design and related procedures**

Inspections and evaluations included the observations that DEH and user design comments were disregarded, or took low priority; that comments were not accounted for; that insufficient time was available to conduct effective design reviews; and that DEH personnel were not trained in design review and did not participate fully in the process. With emphasis on cost and time for project accomplishment, there was the perception that design quality took secondary emphasis. Also, many AEs (architect/engineer firms) did not fully understand their contractual responsibilities regarding cost, time, and design quality.

### **RECOMMENDED RESOLUTION OR LESSON LEARNED:**

- Revised Engineering Regulation 1110-345-100, Design Policy for Military Construction, is intended to improve design management. A new ER, to be completed by 30 Sep 90, will address design quality aspects of the total process, including design review.
- The Military Design Review course will also be changed to focus more closely on design quality through the total design quality management process.
- Be sure AEs fully understand their contractual responsibilities for providing quality work. The Corps AE Responsibility Management Program and new improvements in evaluating contract AEs will also help to obtain better products and services.
- CERL has developed the Automated Review Management System (ARMS), which is operational at Sacramento District (the technical center of expertise for fielding the system Corps-wide during the early 1990s).
- ARMS provides much-needed feedback and an audit trail for design comments, and will be available to DEHs, MACOM engineer staff, and other parties regularly involved in the design review process.

PROPONENT OFFICE FOR ISSUE OR POLICY: CEMP-ES

POC TELEPHONE #: (Major Issue) CIV (202) 272-8887, MIL AV 285-8887

POC TELEPHONE #: (ARMS) CIV (202) 272-1246, MIL AV 285-1246

**PROBLEM OR ISSUE:**  
**Documentation for project turnover**

**SOURCE DOCUMENT:** DCAF Bulletin 89-2

In several instances, the signed DD Form 1354, certifying completion of the work, except for known deficiencies listed on the reverse side of the form, were not furnished to the contracting officer's representative and signed by the DEH at the time of beneficial occupancy as required by AR 415-10. In some instances more than a year after the transfer took place, the DD Form 1354s had still not been submitted to the DEH for signature.

**RECOMMENDED RESOLUTION OR LESSON LEARNED:**

DEHs should insist that their supporting division or district provide all documentation for turnover at the time of beneficial occupancy in order that transfer of the facility can be acknowledged, by DEH signature, prior to occupancy.

**PROPONENT OFFICE FOR ISSUE OR POLICY:** CEMP-CP

**POC TELEPHONE #:** CIV (202) 272-1380, MIL AV 285-1380



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**ARMY DEH  
ACRONYMS  
AND  
TERMS**



## ACRONYMS

|                                                                     |                                                            |
|---------------------------------------------------------------------|------------------------------------------------------------|
| ACASS - AE Contract Administration Support System                   | DOL - Director of Logistics                                |
| ACCES - Army Civilian Career Evaluation System                      | DRMO - Defense Resale and Marketing Office                 |
| ACCI - area construction cost index                                 | DU - dwelling units                                        |
| ACTEDS - Army Civilian Training, Education and Development System   | ECA - Environmental Compliance Assessments                 |
| ACTS - Army Criteria Tracking System                                | ECP - engineer change proposal                             |
| ADAPPO - Assistant Deputy Army Power Procurement Officer            | EER - Enlisted Efficiency Report                           |
| AE - architect/engineer                                             | EHSC - Engineering and Housing Support Center              |
| AFH - Army Family Housing                                           | EIRS - Engineering Improvement Recommendation System       |
| AIF - Army Industrial Fund                                          | EISs - environmental impact statements                     |
| AMC - Army Materiel Command                                         | ER - Engineer Regulations                                  |
| AMSC - Army Management Staff College                                | ESA - Endangered Species Act                               |
| AMSC - Army management structure codes                              | FAA - Federal Aviation Administration                      |
| APF - appropriated funds                                            | FAR - Federal Acquisition Regulation                       |
| ARMS - Automated Review Management System                           | FCR - functional chief's representative                    |
| ARR - annual recurring requirement                                  | FE - facilities engineering                                |
| ARRP - Army Radon Reduction Program                                 | FIRMS - Fire Protection Management System                  |
| ASA - Assistant Secretary of the Army                               | FPORIs - fire protection operational readiness inspections |
| ASIP - Army Stationing and Installation Plan                        | FY - fiscal year                                           |
| AVSCOM - Aviation Systems Command                                   | GFOQ - General and Flag Officer Quarters                   |
| AWP - annual work plan                                              | GSA - General Services Administration                      |
| BCE - base-level commercial equipment                               | HEMP - high altitude electromagnetic pulse                 |
| BMAR - backlog of maintenance and repair                            | HND - Huntsville Engineer Div                              |
| BOD - beneficial occupancy date                                     | HW - hazardous waste                                       |
| CA - commercial activity                                            | ICQ - Installation Commanders Quarters                     |
| CAL - Civilian Leadership Training                                  | ICUZ - Installation Compatible Use Zone                    |
| CBT - computer based training                                       | IDG - installation design guide                            |
| CERCLA - Comprehensive Environmental Compensation and Liability Act | IDP - individual development plan                          |
| CINC - Commander in Chief                                           | IDT - indefinite delivery type contract                    |
| CLUP - comprehensive land use planning                              | IFS - Integrated Facilities System                         |
| CMS - Career Management System                                      | IFS-M - Integrated Facilities System-Mini/Micro            |
| COD - Chief of Deployment                                           | IPM - Integrated pest management                           |
| CONUS - continental U.S.                                            | IPP - installation programs and policy                     |
| COR - contracting officer's representative                          | ISM - Installation Support Model                           |
| CP - Career Program                                                 | JOC - job order contracting                                |
| CPM - Career Program Manager                                        | JRTC - Joint Readiness Training Center                     |
| CPO - Civilian Personnel Office                                     | MACOM - major command                                      |
| CRRC - Construction Requirements Review Committee                   | MCA - military construction, Army                          |
| CSA - Chief of Staff, Army                                          | MEO - most efficient organization                          |
| CTA - Common Table of Allowances                                    | MILCON - military construction                             |
| C3I - command, control, communications and intelligence             | MWR - morale, welfare, and recreation                      |
| DA - Department of the Army                                         | NAFT's - nonappropriated fund instrumentalities            |
| DCIS - Design Construction Information System                       | DNT - nondestructive testing                               |
| DCSLOG - Deputy Chief of Staff, Logistics                           | NMCS - National Military Command System                    |
| DEH - Directorate of Engineering and Housing                        | NPP - non-prepriced                                        |
| DEMIS - Defense Environmental Management Information System         | OASA - Office of the Assistant Secretary of the Army       |
| DERA - Defense Environmental Restoration Account                    | OCONUS - outside the continental U.S.                      |
| DESR - Defense Environmental Status Report                          | OEA - Office of Economic Adjustment                        |
| DFSC - Defense Fuel Supply Center                                   | OER - Officer Efficiency Report                            |
| DLS - Defense Logistics Agency                                      | OMA - operations and maintenance, Army                     |
| DMAR - deferred maintenance and repair                              | OMAR - operations and maintenance, Army Reserve            |
| DOC - Director of Contracting                                       | OMEE - operation and maintenance engineering enhancement   |
| DOIM - Director of Information Management                           | OSD - Office of the Secretary of Defense                   |
|                                                                     | PAO - Public Affairs Office                                |
|                                                                     | PCI - pavement condition index                             |
|                                                                     | PDB - Project Development Brochure                         |

PDM - Program Decision Memorandum  
 PECIP - Productivity Enhancing Capital Investment Program  
 PIF - productivity investment funds  
 PME - Personnel Management for Executives  
 POM - Program Objective Memorandum  
 PREP - Power Reliability Enhancement Program  
 PROSPECT - Proponent Sponsored Engineer Corps Training  
 PWS - performance work statement  
 QAP - quality assurance plan  
 QASP - quality assurance surveillance plan  
 QRIP - quick return on investment program  
 RAP - requirements analysis planning  
 R&C - resources and construction  
 RDTE - research, development, testing, and evaluation  
 RMP - Resource Management Plan  
 RPLANS - Real Property Planning and Analysis System  
 RPMA - real property maintenance activities  
 SA - Secretary of the Army  
 SARA - Superfund Amendments and Reauthorization Act  
 SCP - System Change Proposal  
 SDTG - Single-Discipline Task Groups  
 SECDEF - Secretary of Defense  
 SES - shared energy savings  
 SHPO - state historic preservation office  
 SKAP - skills, knowledge, abilities and personal characteristics  
 SOP - standard operating procedures  
 SSEB - Source Selection Evaluation Board  
 TAB - tabulation of existing and required facilities  
 TAP - The Army Plan  
 TCX - technical center of expertise  
 TDAC - technical data activity code  
 TDFR - Tech Data Feeder Report  
 TDR - Technical Data Report  
 TRAIN - Training Resource Access Information Network  
 UCAS - USAREUR Community Automation System  
 UPH - unaccompanied personnel housing  
 UPS - uninterruptible power systems  
 URR - unconstrained requirements report  
 USAAA - U.S. Army Audit Agency  
 USEHSC - U.S. Army Engineering and Housing Support Center  
 USAREUR - U.S. Army, Europe  
 USATHAMA - U.S. Army Toxic and Hazardous Material Agency  
 USTs - underground storage tanks



## TERMS

AE Contract Administration Support System (ACASS)  
 annual recurring requirement (ARR)  
 annual work plan (AWP)  
 appropriated funds (APF)  
 architect/engineer (AE)  
 area construction cost index (ACCI)  
 Army Civilian Career Evaluation System (ACCES)  
 Army Civilian Training, Education and Development System (ACTEDS)  
 Army Criteria Tracking System (ACTS)  
 Army Family Housing (AFH)  
 Army Industrial Fund (AIF)  
 Army management structure codes (AMSC)  
 Army Management Staff College (AMSC)  
 Army Materiel Command (AMC)  
 Army Radon Reduction Program (ARRP)  
 Army Stationing and Installation Plan (ASIP)  
 Assistant Deputy Army Power Procurement Officer (ADAPPO)  
 Assistant Secretary of the Army (ASA)  
 Automated Review Management System (ARMS)  
 Aviation Systems Command (AVSCOM)  
 backlog of maintenance and repair (BMAR)  
 base-level commercial equipment (BCE)  
 beneficial occupancy date (BOD)  
 Career Management System (CMS)  
 Career Program (CP)  
 Career Program Manager (CPM)  
 Chief of Deployment (COD)  
 Chief of Staff, Army (CSA)  
 Civilian Leadership Training (CAL)  
 Civilian Personnel Office (CPO)  
 command, control, communications and intelligence (C3I)  
 Commander in Chief (CINC)  
 commercial activity (CA)  
 Common Table of Allowances (CTA)  
 Comprehensive Environmental Compensation and Liability Act (CERCLA)  
 comprehensive land use planning (CLUP)  
 computer base training (CBT)  
 Construction Requirements Review Committee (CRRC)  
 continental U.S. (CONUS)  
 contracting officer's representative (COR)  
 Defense Environmental Management Information System (DEMIS)  
 Defense Environmental Restoration Account (DERA)  
 Defense Environmental Status Report (DESR)  
 Defense Fuel Supply Center (DFSC)  
 Defense Logistics Agency (DLA)  
 Defense Resale and Marketing Office (DRMO)  
 deferred maintenance and repair (DMAR)  
 Department of the Army (DA)  
 Deputy Chief of Staff, Logistics (DCSLOG)  
 Design Construction Information System (DCIS)  
 Director of Information Management (DOIM)  
 Director of Contracting (DOC)  
 Director of Logistics (DOL)  
 Directorate of Engineering and Housing (DEH)  
 dwelling units (DU)  
 Endangered Species Act (ESA)  
 engineer change proposal (ECP)  
 Engineer Regulations (ER)  
 Engineering and Housing Support Center (EHSC)  
 Engineering Improvement Recommendation System (EIRS)  
 Enlisted Efficiency Report (EER)  
 environmental impact statements (EISs)  
 Environmental Compliance Assessments (ECA)  
 facilities engineering (FE)  
 Federal Acquisition Regulation (FAR)  
 Federal Aviation Administration (FAA)  
 fire protection operational readiness inspections (FPORIs)  
 Fire Protection Management System (FIRMS)  
 fiscal year (FY)  
 functional chief's representative (FCR)  
 General and Flag Officer Quarters (GFOQ)  
 General Services Administration (GSA)  
 hazardous waste (HW)  
 high altitude electromagnetic pulse (HEMP)  
 Huntsville Engineer Div (HND)  
 indefinite delivery type contract (IDT)  
 individual development plan (IDP)  
 Installation Commanders Quarters (ICQ)  
 Installation Compatible Use Zone (ICUZ)  
 installation design guide (IDG)  
 installation programs and policy (IPP)  
 Installation Support Model (ISM)  
 Integrated Facilities System (IFS)  
 Integrated Facilities System-Mini/Micro (IFS-M)  
 Integrated pest management (IPM)  
 job order contracting (JOC)  
 Joint Readiness Training Center (JRTC)  
 major command (MACOM)  
 military construction (MILCON)  
 military construction, Army (MCA)  
 morale, welfare, and recreation (MWR)  
 most efficient organization (MEO)  
 National Military Command System (NMCS)  
 non-prepriced (NPP)  
 nonappropriated fund instrumentalities (NAFI's)  
 nondestructive testing (NDT)  
 Office of Economic Adjustment (OEA)  
 Office of the Assistant Secretary of the Army (OASA)  
 Office of the Secretary of Defense (OSD)  
 Officer Efficiency Report (OER)  
 operation and maintenance engineering enhancement (OMEE)  
 operations and maintenance, Army (OMA)  
 operations and maintenance, Army Reserve (OMAR)  
 outside the continental U.S. (OCONUS)  
 pavement condition index (PCI)  
 performance work statement (PWS)  
 Personnel Management for Executives (PME)

PIF (productivity investment funds)  
 Power Reliability Enhancement Program (PREP)  
 Productivity Enhancing Capital Investment Program  
 (PECIP)  
 Program Decision Memorandum (PDM)  
 Program Objective Memorandum (POM)  
 Project Development Brochure (PDB)  
 Proponent Sponsored Engineer Corps Training  
 (PROSPECT)  
 Public Affairs Office (PAO)  
 quality assurance surveillance plan (QASP)  
 quality assurance plan (QAP)  
 quick return on investment program (QRIP)  
 real property maintenance activities (RPMA)  
 Real Property Planning and Analysis System (RPLANS)  
 requirements analysis planning (RAP)  
 research, development, testing, and evaluation (RDTE)  
 Resource Management Plan (RMP)  
 resources and construction (R&C)  
 Secretary of Defense (SECDEF)  
 Secretary of the Army (SA)  
 shared energy savings (SES)  
 Single-Discipline Task Groups (SDTG)  
 skills, knowledge, abilities and personal characteristics  
 (SKAP)  
 Source Selection Evaluation Board (SSEB)  
 standard operating procedures (SOP)  
 state historic preservation office (SHPO)  
 Superfund Amendments and Reauthorization Act (SARA)  
 System Change Proposal (SCP)  
 tabulation of existing and required facilities (TAB)  
 Tech Data Feeder Report (TDFR)  
 technical center of expertise (TCX)  
 technical data activity code (TDAC)  
 Technical Data Report (TDR)  
 The Army Plan (TAP)  
 Training Resource Access Information Network (TRAIN)  
 U.S. Army Audit Agency (USAAA)  
 U.S. Army Engineering and Housing Support Center  
 (USEHSC)  
 U.S. Army, Europe (USAREUR)  
 U.S. Army Toxic and Hazardous Material Agency  
 (USATHAMA)  
 unaccompanied personnel housing (UPH)  
 unconstrained requirements report (URR)  
 underground storage tanks (USTs)  
 uninterruptible power systems (UPS)  
 USAREUR Community Automation System (UCAS)



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| ETN 81-3                                     | INSPECTION OF WOOD POLES                                                                                            | 19 FEB 81                           |
| ETN 81-4                                     | CONSERVING ELECTRICAL ENERGY                                                                                        | 01 APR 81                           |
| ETN 81-5                                     | MINIMIZING IMPACT OF WATER SUPPLY OUTAGES                                                                           | 26 JUN 81                           |
| ETN 81-7                                     | AIR CIRCUIT BREAKER MTNCE,SUPPL                                                                                     | 119 JUN 81                          |
| ETN 81-9                                     | FLUORESCENT LAMPS                                                                                                   | 18 SEP 81                           |
| ETN 81-10                                    | SELF-ILLUMINATING EXIT SIGNS                                                                                        | 18 SEP 81                           |
| ETN 82-4                                     | FLUIDIZED BED COMBUSTION SYSTEMS                                                                                    | 18 JAN 82                           |
| ETN 82-7                                     | CAPACITOR FAILURES                                                                                                  | 25 FEB 82                           |
| ETN 82-8                                     | TV AND RADIO INTERFERENCE                                                                                           | 25 FEB 82                           |
| ETN 82-9                                     | LOW COST TRIHALOMETHANE TECHNOLOGY                                                                                  | 12 MAR 82                           |
| ETN 82-10                                    | CURRENT SEWER SYSTEM ... ANALYSIS & CORRECTION                                                                      | 27 APR 82                           |
| ETN 82-11                                    | DISTRIBUTION OF PRESERVATION BRIEFS                                                                                 | 02 JUL 82                           |
| ETN 82-12                                    | TESTING DIELECTRIC OILS FOR PCBs                                                                                    | 23 JAN 84                           |
| ETN 83-1                                     | WATER CONSERVATION METHODS                                                                                          | 30 MAY 83                           |
| ETN 83-2                                     | REPAIRS TO HVAC SYS IN OLDER FH UNITS                                                                               | 09 NOV 83                           |
| ETN 84-2                                     | APPROP TECHNOLOGY FOR ARMY WASTE MGMT:<br>APPLICATION FOR REMOTE ...                                                | 01 FEB 84                           |
| ETN 84-3                                     | WATER SAVINGS FR LOW-FLOW SHOWER HEADS                                                                              | 24 AUG 84                           |
| ETN 84-5                                     | LANDFILL GAS CONTRL AT MIL INSTALLATIONS                                                                            | 31 JUL 84                           |
| ETN 84-6                                     | APPL OF CONDENSER HEAT RECOV TO DOMESTIC                                                                            | 03 AUG 84                           |
| ETN 84-7                                     | USE OF SYNTHETIC-MEDIA TRICKLING-FILTER                                                                             | 31 JUL 84                           |
| ETN 85-1                                     | SURFACED AREAS MATERIAL UTIL CAT (SAMUC)                                                                            | 10 MAR 89                           |
| ETN 86-1                                     | ECONOMIC ANALYSIS FOR SOLVENT MGMT OPTIONS                                                                          | 30 MAY 86                           |
| ETN 86-2                                     | SOLVENT MIN & SUBSTITUTION GUIDELINES                                                                               | 30 JAN 86                           |
| ETN 86-3                                     | USE OF DIETHYLAMINOETHANOL, MORPHOLINE                                                                              | 01 JAN 86                           |
| ETN 86-4                                     | COMPOSTING TOILETS AND VAULT AERATION                                                                               | 30 SEP 86                           |
| ETN 87-8                                     | ENCAPSULANTS AS AN ASBESTOS CONTRL METHOD                                                                           | 17 SEP 87                           |
| ETN 87-9                                     | PAINT TESTING KIT                                                                                                   | 26 OCT 87                           |
| FAR                                          | FEDERAL ACQUISITION REGULATION                                                                                      | 01 APR 84                           |
| FM 3-3                                       | NUCLEAR, BIOLOGICAL AND CHEMICAL (NBC)<br>CONTAMINATION AVOIDANCE                                                   | SEP 86                              |
| FM 3-4                                       | NBC PROTECTION                                                                                                      | OCT 85                              |
| FM 3-5                                       | NBC DECONTAMINATION                                                                                                 | 24 JUN 85                           |
| FM 3-6                                       | FIELD BEHAVIOR OF NBC AGENTS (INCLUDING SMOKE<br>AND INCENDARIES)                                                   | 03 NOV 86                           |
| FM 3-100                                     | NBC OPERATIONS                                                                                                      | 17 SEP 85                           |
| FM 5-104                                     | GENERAL ENGINEERING                                                                                                 | NOV 86                              |
| FM 5-116                                     | ENGINEER OPERATIONS: ECHELONS ABOVE CORPS                                                                           | 17 MAR 89                           |
| HQDA LTR<br>40-88-3                          | ARMY RADON PROGRAM                                                                                                  | 21 MAR 88                           |
| HQDA LTR<br>420-89-1                         | RELOCATABLE BUILDINGS                                                                                               | 18 DEC 89                           |
| IFS MAN                                      | IFS-M PRE-DEPLOYMENT HANDBOOK                                                                                       | 09 AUG 89                           |
| MEMO DEPPM<br>MEMO DEPPM                     | ENERGY SELECTION FOR ARMY FACILITIES<br>PRIV SECTOR FINANCED DEF ENERGY CONTR                                       | 10 FEB 89<br>09 DEC 88              |
| OPA 86-004<br>OPA 87-009                     | A CITIZEN'S GUIDE TO RADON<br>RADON REDUCTION IN NEW CONSTRUCTION                                                   | AUG 86<br>AUG 87                    |
| PAVER FD MAN<br>PAVER FD MAN<br>PAVER IMP BR | ASPHALT SURFACED ROADS AND PARKING LOTS<br>JOINTED CONCRETE ROADS AND PARKING LOTS<br>PAVER IMPLEMENTATION BROCHURE | 01 JUN 86<br>01 JUN 89<br>01 MAY 90 |



| DOCNO      | TITLE                                                                                         | DATE       |
|------------|-----------------------------------------------------------------------------------------------|------------|
| PAVER MISC | NONDESTRUCTIVE PAVEMENT TEST & EVALUATION                                                     | 01 JAN 85  |
| PAVER MISC | PAVER IMPL BY AE CONTRACT                                                                     | 01 MAR 90  |
| PAVER MISC | PAVER MGT GUIDE SPEC FOR PAVER REINSPECTION                                                   | 01 MAR 90  |
| PAVER MISC | MICRO PAVER IMPLEMENTATION OF THE UNSURFACED<br>ROAD MANAGEMENT SYSTEM                        | 01 APR 90  |
| POLICY LTR | PET CEMETERIES                                                                                | 16 MAY 88  |
| POLICY LTR | REVISION TO AR 420-74                                                                         | 01 APR 87  |
| POLICY LTR | POL ON HUNTING, FISHING, AND TRAPPING                                                         | 16 APR 89  |
| POLICY LTR | MGT RESP UNDERGROUND FUEL TANK INST A/AF                                                      | 12 DEC 87  |
| SB 8-75    | ARMY MEDICAL DEPARTMENT SUPPLY INFORMATION                                                    | 30 AUG 89  |
| TB 18-111  | ARMY AUTOMATION TECHNICAL DOCUMENTATION                                                       | JAN 79     |
| TB 43-0142 | SAFETY INSPECTION AND TESTING OF LIFTING DEVICES                                              | JUN 82     |
|            |                                                                                               | 003-JUN 87 |
| TB 43-0210 | NONAERONAUTICAL EQUIPMENT ARMY OIL ANALYSIS<br>PROGRAM                                        | DEC 87     |
|            |                                                                                               | 001-JUN 88 |
| TB 43-180  | CALIBRATION AND REPAIR REQUIREMENTS FOR THE<br>MAINTENANCE OF ARMY MATERIAL                   | JAN 87     |
| TB 600-1   | PROCEDURES FOR SELECTING, TRAINING, TESTING,<br>AND QUALIFYING OPERATIONS OF EQUIPMENT/SYSTEM | 25 JUL 77  |
|            |                                                                                               | 003-NOV 83 |
| TB 750-25  | MTN OF SUPPLIES AND EQUIPMENT: TMDE                                                           |            |
|            | CALIBRATION AND REPAIR SUPPORT PROGRAM                                                        | 09 NOV 84  |
| TB MED 501 | HEARING CONSERVATION                                                                          | FEB 82     |
| TC 25-1    | TRAINING LAND                                                                                 |            |
| TG 164     | THE DEPT OF THE ARMY RADON PROGRAM                                                            | JUN 89     |
| TM 3-250   | STORAGE, SHIPMENT, HANDLING AND DISPOSAL OF<br>CHEMICAL AGENTS AND HAZARDOUS CHEMICALS        | 07 MAR 69  |
| TM 3-261   | HANDLING AND DISPOSAL OF UNWANTED RADIOACTIVE<br>MATERIAL                                     | 12 MAY 88  |
|            |                                                                                               | 001-JAN 90 |
| TM 5-315   | FIRE FIGHTING AND RESCUE PROCEDURES                                                           | 21 APR 71  |
| TM 5-608   | CONTRACTING FOR CUSTODIAL SVC AT ARMY FAC                                                     | 10 APR 78  |
| TM 5-609   | MILITARY CUSTODIAL SERVICES MANUAL                                                            | 01 SEP 69  |
| TM 5-610   | PREVENTIVE MAINTENANCE: FACILITIES                                                            |            |
|            | ENGINEERING BUILDINGS AND STRUCTURES                                                          | 01 NOV 79  |
| TM 5-611   | REPAIRS AND UTILITIES POST ENGINEER SHOPS                                                     | 07 OCT 60  |
| TM 5-615   | CONCRETE AND MASONRY                                                                          | 01 NOV 63  |
| TM 5-617   | MAINTENANCE & REPAIR OF ROOFS                                                                 | 01 JAN 74  |
| TM 5-618   | PAINTS AND PROTECTIVE COATINGS                                                                | 15 JUN 81  |
| TM 5-620   | BLDGS & STRUC CALK/GLAZ REPAIRS                                                               | 01 MAR 58  |
| TM 6-621   | BLDGS & STRUC LATHING AND PLASTERING                                                          | 01 AUG 58  |
| TM 6-622   | MAINTENANCE OF WATERFRONT FACILITIES                                                          | 01 AUG 88  |
| TM 5-623   | PAVEMENT MAINTENANCE MANAGEMENT (PAVER)                                                       | 01 NOV 82  |
| TM 5-624   | MAINTENANCE AND REPAIR OF SURFACE AREAS                                                       | 31 MAR 77  |
| TM 5-627   | MAINTENANCE OF TRACKAGE                                                                       | 01 JAN 80  |
| TM 5-629   | HERBICIDE MANUAL                                                                              | 24 MAY 89  |
| TM 5-630   | NAT RES-LAND MGMT & GROUND MNTCE                                                              | 01 JUL 82  |
| TM 5-631   | FOREST MANAGEMENT                                                                             | 15 DEC 81  |
| TM 5-632   | ENTOMOLOGY MANUAL                                                                             | 01 DEC 71  |
| TM 5-633   | FISH AND WILDLIFE MANAGEMENT                                                                  | 01 FEB 82  |
| TM 5-634   | REFUSE COLLECTION AND DISPOSAL                                                                | 01 JUL 58  |
| TM 5-635   | NAT RES-OUTDOOR REC & CULTURAL VALUES                                                         | 01 FEB 82  |

| DOCNO        | TITLE                                                                                                                  | DATE       |
|--------------|------------------------------------------------------------------------------------------------------------------------|------------|
| TM 5-636     | KITCHEN EQUIPMENT REPAIR AND UTILITIES                                                                                 | 01 JUL 46  |
| TM 5-642     | SMALL HEATING SYSTEMS                                                                                                  | 01 JUN 46  |
| TM 5-650     | CENTRAL BOILER PLANTS                                                                                                  | 13 OCT 89  |
| TM 5-651     | CENTRAL BOILER PLANTS: INSPECTION AND<br>PREVENTIVE MAINTENANCE SERVICES                                               | 10 DEC 46  |
| TM 5-652     | STEAM, HOT WATER & GAS DISTR SYS REP, UTI                                                                              | 01 APR 47  |
| TM 5-653     | STEAM, HOT WATER & GAS DISTR SYS INSPECTION &<br>PREV MNTCE                                                            | 01 JUN 46  |
| TM 5-654     | MAINTENANCE & OPERATION OF GAS SYSTEMS                                                                                 | 01 NOV 70  |
| TM 5-660     | MAINTENANCE AND OPERATION OF WATER SUPPLY,<br>TREATMENT AND DISTRIBUTION SYSTEMS                                       | 30 AUG 84  |
| TM 5-661     | INSPECTION AND PREVENTIVE MAINTENANCE SERVICES<br>FOR WATER SUPPLY AT FIXED INSTALLATION                               | 21 SEP 45  |
| TM 5-662     | SWIMMING POOL OPERATION AND MAINTENANCE                                                                                | 01-JUN 47  |
| TM 5-665     | OPERATION AND MAINTENANCE OF DOMESTIC AND<br>INDUSTRIAL WASTE WATER SYSTEMS                                            | 28 FEB 86  |
| TM 5-666     | INSPECTION AND PREVENTIVE MAINTENANCE<br>SERVICES, SEWAGE TREATMENT PLANTS AND SEWER<br>SYSTEMS AT FIXED INSTALLATIONS | 01 JAN 82  |
| TM 5-670     | REPAIRS AND UTILITIES REFRIG, AC, MECH VENT &<br>EVAP COOLING                                                          | 29 SEP 45  |
| TM 5-671     | PREVENTIVE MNTCE FOR REFRIG, AC, MECH VENT AND<br>EVAP COOLING                                                         | 01 FEB 62  |
| TM 5-678     | PETROLEUM, OIL AND LUBRICANTS                                                                                          | 01 AUG 58  |
| TM 5-695     | MAINTENANCE OF FIRE PROTECTION SYSTEMS                                                                                 | 01 OCT 65  |
| TM 5-680/85  | OPER, MNTCE & REPAIR OF AUXILIARY GENER                                                                                | 01 SEP 89  |
| TM 5-682     | FAC ENGRG - ELECTRICAL FACILITIES - SAFETY                                                                             | 01 APR 47  |
| TM 5-683     | FAC ENGRG - ELECTRICAL INTERIOR                                                                                        | 01 JUN 83  |
| TM 5-684     | FAC ENGRG - ELECTRICAL EXTERIOR FACILITIES                                                                             | 01 MAR 72  |
| TM 5-801-1   | HISTORIC PRESERVATION-ADMIN PROCEDURES                                                                                 | 20 APR 79  |
| TM 5-801-2   | HIST PRESERVATION-MAINTENANCE PROCEDURES                                                                               | 01 NOV 85  |
| TM 803-2     | PLANNING IN THE NOISE ENVIRONMENT                                                                                      | 01 FEB 77  |
| TM 5-814-5   | SANITARY LANDFILLS                                                                                                     | 15 JUN 78  |
| TM 38-250    | PACKAGING AND MATERIALS HANDLING: PREPARATION OF<br>HAZARDOUS MATERIALS FOR MILITARY AIR SHIPMENT                      | 15 AUG 83  |
| TN 405-80-1  | REAL PROPERTY FUNCTION AUTOMATION                                                                                      | 001-JUN 85 |
| TN 420-10-01 | DIRECTORATE OF ENGINEERING AND HOUSING<br>RESOURCES MANAGEMENT SYSTEM HANDBOOK                                         | 15 JAN 88  |
| TN 420-10-02 | WORK CLASSIFICATION GUIDE FOR DEFENSE<br>ENVIRONMENTAL RESTORATION PROGRAM (DERP)                                      | 28 FEB 90  |
| TN 420-10-03 | JOC PLANNING AND EXECUTION GUIDE                                                                                       | 31 MAR 90  |
| TN 420-10-04 | FACILITIES ENGINEERING MANAGEMENT HANDBOOK                                                                             | 06 APR 90  |
| TN 420-41-1  | GUIDANCE FOR CALCULATION OF RATES FOR SALE OF<br>UTILITIES SERVICES                                                    | 30 APR 90  |
| TN 420-74-1  | MGMT OF RED-COCKADED WOODPECKERS ON ARMY<br>INSTALLATIONS                                                              | NO DATE    |
| TN 420-74-2  | ENDANGERED SPECIES MGMT REQUIRED ON ARMY<br>INSTALLATIONS                                                              | 01 SEP 89  |
| TN 420-76-1  | PEST CTRL MATERIALS SUITABLE FOR SELF-HELP PROGRAMS                                                                    | 21 AUG 89  |
| TN 600-45-1  | FACILITIES ENGINEERING ARMY COMMUNITIES OF<br>EXCELLENCE: FACILITIES ACTION PLAN                                       | 17 NOV 89  |
| USER MANUAL  | RPLANS USER MANUAL (TEST)<br>ARMY INFORMATION RESOURCES MANAGEMENT PLAN                                                | 22 SEP 89  |
|              |                                                                                                                        | 31 JUL 90  |
|              |                                                                                                                        | 01 NOV 88  |

| DOCNO | TITLE                                                                           | DATE      |
|-------|---------------------------------------------------------------------------------|-----------|
|       | ARMY COMMUNITIES OF EXCELLENCE: SHARING GOOD NEWS (NO DATE)                     |           |
|       | CAREER PROGRAM 18 (CP18), ENGINEERS AND SCIENTISTS                              |           |
|       | CHIEF OF ENGINEERS GUIDANCE LETTER (5 FEB 90)                                   |           |
|       | DAEN-ZCE LETTER (14 MAY 85)                                                     |           |
|       | INTERIM POLICY                                                                  |           |
|       | DASD (IN) MEMORANDUM (17 JAN 85)                                                |           |
|       | ENVIRONMENTAL AUDITS OF DOD FACILITIES                                          |           |
|       | DEPARTMENT OF THE ARMY, ENERGY RESOURCES MANAGEMENT PLAN, FY86-FY95 (01 SEP 89) |           |
|       | DOD DIRECTIVE 4700.4 NATURAL RESOURCE MANAGEMENT GUIDELINE                      | 24 JAN 89 |
|       | DOD DIRECTIVE 5-5100-44                                                         |           |
|       | DOD INSTRUCTION 4700.2                                                          |           |
|       | DOD INTERIM POLICY GUIDANCE                                                     |           |
|       | DOD 6060.1                                                                      |           |
|       | DODI 4630.7                                                                     |           |
|       | IMPLEMENTATION LETTER TO USACE DIVISION AND DISTRICTS (01 FEB 90)               |           |
|       | MACOM AND LOCAL CIVILIAN PERSONNEL ISSUANCES                                    |           |
|       | MEMO, OCE, DAEN-ZCP-B (29 NOV 89)                                               |           |
|       | MAINTENANCE AND REPAIR PROJECT REPORTING TO CONGRESS, FISCAL YEAR 1991          |           |
|       | PRESIDENT'S BUDGET                                                              |           |
|       | MEMOS, ASA(RD&A) AND ASA(I&L) (31 MAY 88)                                       |           |
|       | JOB ORDER CONTRACTING (JOC) IMPLEMENTATION                                      |           |
|       | MILCON AUTHORIZATION AND APPROPRIATION ACT                                      |           |
|       | OMB CIRCULAR A-76 AND SUPPLEMENT (AUG 83)                                       |           |
|       | OMB CIRCULAR A-104                                                              |           |
|       | OMB CIRCULAR A-106                                                              |           |
|       | PUBLIC LAW (10 USC 2665 F) - TIMBER SALE PROGRAM                                |           |
|       | PUBLIC LAW 92-367, NATIONAL DAM INSPECTION ACT OF 1972, EXECUTIVE ORDER         |           |
|       | 23 APR 77 ON DAM SAFETY                                                         |           |
|       | PUBLIC LAW 99-272 (42 U.S.C. 8287) (7 APR 86)                                   |           |
|       | TITLE VIII - SHARED ENERGY SAVINGS                                              |           |
|       | PUBLIC LAW 100-478                                                              |           |
|       | PUBLIC LAW 100-551 TITLE III — INDOOR RADON ABATEMENT, SECTION 309,             |           |
|       | 28 OCT 88                                                                       |           |
|       | PUBLIC LAW 100-615 (42 U.S.C. 8253) (NOV 88)                                    |           |
|       | FEDERAL ENERGY MANAGEMENT IMPROVEMENT (FEMI) ACT                                |           |
|       | SEC DEF MEMOS NOS. 61163 & 61164 (08 DEC 81)                                    |           |
|       | THE ARMY SCIENCE BOARD                                                          |           |
|       | THE DA INSPECTOR GENERAL                                                        |           |
|       | THE ENDANGERED SPECIES ACT OF 1973                                              |           |

## **APPENDIX B**





## CORPS OF ENGINEERS PUBLICATIONS

## KEY:

AR - ARMY REGULATION  
 TM - TECHNICAL MANUAL  
 ER - ENGINEER REGULATION  
 EP - ENGINEER PAMPHLET  
 ETL - ENGINEER TECHNICAL LETTER  
 UN - UNNUMBERED PUBLICATION  
 CE-R - CORPS OF ENGINEERS RESERVE SPECIFICATIONS  
 DG - DESIGN GUIDE  
 CEAGS - CORPS OF ENGINEERS ABBREVIATED GUIDE SPECIFICATION  
 AEI - ARCHITECTURAL ENGINEERING INSTRUCTION

| TYPE | NUMBER   | TITLE                                  | DATE     |
|------|----------|----------------------------------------|----------|
| AR   | 210-5    | PLNG. PROCESS FOR CONST. IN NCR        | 06/30/77 |
| AR   | 415-17   | COST ESTIMATING FOR MIL. PROGRAMMING   | 02/15/80 |
| TM   | 5-800-2  | COST ESTIMATE, MILITARY CONSTR.        | 06/12/85 |
| TM   | 5-802-1  | ECON. STUDIES FOR MILCON               | 12/31/86 |
| TM   | 5-803-1  | INSTALLATION MASTER PLANNING           | 06/13/86 |
| TM   | 5-803-2  | ENVIR. PROT. IN NOISE ENVIRONMENT      | 06/15/78 |
| TM   | 5-803-4  | PLNG. OF ARMY AVIATION FACILITIES      | 07/15/83 |
| TM   | 5-803-5  | INSTALLATION DESIGN                    | 03/01/81 |
| TM   | 5-803-7  | AIRFIELD & HELIPORT PLNG. CRITERIA     | 05/12/81 |
| TM   | 5-803-8  | LAND USE PLANNING                      | 08/26/88 |
| TM   | 5-803-10 | PLNG. & DES. OF OUTDOOR SPORTS FAC.    | 04/05/88 |
| TM   | 5-803-11 | CHILDRENS PLAY AREAS & EQUIP.          | 04-25-88 |
| TM   | 5-803-12 | PLNG. OF OUTDOOR RECR. AREAS           | 09/03/86 |
| TM   | 5-803-13 | LANDSCAPE DES. & PLANTING CRITERIA     | 08/06/88 |
| TM   | 5-805-12 | X-RAY SHIELDING                        | 01/01/90 |
| TM   | 5-805-13 | RAISED FLOOR SYSTEM                    | 09/01/81 |
| TM   | 5-805-14 | ROOFING DESIGN                         | 03/31/66 |
| TM   | 5-805-14 | ROOF DECKING SYSTEMS                   | 07/15/81 |
| TM   | 5-805-4  | NOISE & VIBR. CONT. FOR MECH. EQUIP.   | 12/30/83 |
| TM   | 5-803-6  | CAULKING AND SEALING                   | 01/31/85 |
| TM   | 5-805-7  | WELDING: DESIGN PROCED. & INSPECTION   | 05/20/85 |
| TM   | 5-805-8  | BUILDER'S HARDWARE                     | 07/15/82 |
| TM   | 5-805-9  | POWER PLANT ACOUSTICS                  | 12/30/83 |
| TM   | 5-807-10 | SIGNAGE                                | 12/01/83 |
| TM   | 5-809-1  | LOAD ASSUMPTION FOR BUILDINGS          | 03/28/86 |
| TM   | 50809-2  | CONCRETE DESIGN FOR BUILDINGS          | 08/31/84 |
| TM   | 5-809-3  | MASONRY STRUCTURAL DES. FOR BLDGS.     | 08/01/82 |
| TM   | 5-809-4  | STEEL & ALUM. STRUCT. DES. FOR BLDGS.  | 02/15/83 |
| TM   | 5-809-5  | WOOD STRUCTURAL DESIGN FOR BUILDINGS   | 06/01/83 |
| TM   | 5-809-6  | STRUCT. DES., OTHER THAN BUILDINGS     | 01/16/84 |
| TM   | 5-809-8  | METAL ROOFING AND SIDING               | 03/05/84 |
| TM   | 5-809-10 | SEISMIC DESIGN FOR BUILDINGS           | 02/15/82 |
| TM   | 5-810-1  | MECH. DES., HEATING, VENT. & AIR COND. | 04/01/88 |
| TM   | 5-810-15 | DESIGN OF COAL-FIRED BOILER PLANTS     | 05/07/87 |

| TYPE | NUMBER      | TITLE                                                                                      | DATE     |
|------|-------------|--------------------------------------------------------------------------------------------|----------|
| TM   | 5-810-2     | HIGH TEMP. WATER HEATING SYSTEMS                                                           | 09/12/84 |
| TM   | 5-810-3     | MECH. REFR. & VENT. IN COLD STG. FACS.                                                     | 08/16/82 |
| TM   | 5-810-4     | COMPRESSED AIR                                                                             | 01/12/90 |
| TM   | 5-810-5     | PLUMBING                                                                                   | 01/12/90 |
| TM   | 5-811-1     | ELECTRIC POWER SUPPLY & DISTRIB.                                                           | 09/12/84 |
| TM   | 5-811-7     | ELECT. DES: CATHODIC PROTECTION                                                            | 05/22/85 |
| TM   | 5-811-12    | ELEC. DESIGN - INTERIOR ELEC. SYST.                                                        | 09/01/83 |
| TM   | 5-811-5     | ARMY AVIATION LIGHTING                                                                     | 06/06/80 |
| TM   | 5-812-2     | FIRESTOPPING                                                                               | 01/15/86 |
| TM   | 5-813-3     | WATER SUPPLY, WATER TREATMENT                                                              | 09/16/85 |
| TM   | 5-813-4     | WATER SUPPLY, WATER STORAGE                                                                | 09/20/85 |
| TM   | 5-813-5     | WATER SUPPLY, WTR. DISTR. SYSTEMS                                                          | 11/13/86 |
| TM   | 5-813-7     | WATER SUPPLY, GENL. CONSIDERATIONS                                                         | 06/04/87 |
| TM   | 5-814-2     | PUMPING STATIONS & FORCE MAINS                                                             | 03/15/85 |
| TM   | 5-814-3     | DOMESTIC WASTEWATER TREATMENT                                                              | 05-31-88 |
| TM   | 5-814-5     | SANITARY LANDFILL                                                                          | 08/15/83 |
| TM   | 5-814-7     | HAZARDOUS WASTE LAND DISP./LAND TRTMT.                                                     | 11/29/84 |
| TM   | 5-814-8     | EVAL. CRIT. FOR WATER POLLUTION, ETC.                                                      | 04/23/87 |
| TM   | 5-818-1     | SOILS & GEOLOGY PROCED. FOR FOUNDATION DESIGN, ETC.                                        | 10/21/83 |
| TM   | 5-818-7     | FOUNDATIONS IN EXPANSIVE SOILS                                                             | 09/01/83 |
| TM   | 5-822-2     | GEOM. DES. ROADS, STREETS, WALKS                                                           | 07/14/87 |
| TM   | 5-822-7     | STANDARD PRACTICE FOR CONC. PAVEMENTS                                                      | 08/16/87 |
| TM   | 5-823-4     | MARKING ARMY AIRFIELDS & HELIPORTS                                                         | 07/07/87 |
| TM   | 5-826-1     | ARMY AFLD. PAVEMENT EVAL. CONCEPTS                                                         | 08/12/88 |
| TM   | 5-838-2     | ARMY HEALTH FACILITY DESIGN                                                                | 06/01/90 |
| TM   | 5-841-2     | SPACE PLNG GUIDE, TDA MAINT. FAC.                                                          | 12/01/80 |
| TM   | 5-848-2     | HANDLING OF ACFT./AUTOMOTIVE FUELS                                                         | 01/01/84 |
| TM   | 5-848-3     | GROUND STORAGE OF COAL                                                                     | 03/01/84 |
| TM   | 5-850-2     | AE DESIGN & CONST. @ ARMY & AF. INSTS.                                                     | 07/01/80 |
| TM   | 5-853-1     | DESIGNING FOR SECURITY                                                                     | 08/15/83 |
| TM   | 5-855-1     | FUNDAMENTALS, PROT. DESIGN, WEAPONS                                                        | 11/03/86 |
| TM   | 5-855-4     | HVAC OF HARDENED INSTALLATIONS                                                             | 11/28/86 |
| TM   | 5-855-5     | NUCLEAR ELECTROMAGNETIC PULSE (NEMP) PROTECTION                                            | 02/15/74 |
| ER   | 10-1-41     | CORPS-WIDE CENTRALIZED FUNCTIONS & SPECIAL<br>MISSIONS ASSIGNED TO DIVISIONS AND DISTRICTS | 07/30/85 |
| ER   | 15-1-25     | USACE FACS. STANDARDIZATION COMMITTEE                                                      | 06/16/86 |
| ER   | 145-1-1     | SUPPORT BY HQUSACE, DIVS., & DIST.                                                         | 05/31/89 |
| ER   | 385-1-92    | SAFETY & OCCUP. HEALTH DOCUMENTS RQMT.<br>FOR HAZARDOUS WASTE SITES                        | 08/30/84 |
| ER   | 415-345-230 | NEGOTIATION REGULATION COST-PLUS-A-<br>FIXED FEE CONST. CONTRACTS                          | 01/10/67 |
| ER   | 415-345-270 | ADMINISTRATION REG. FOR COST-PLUS-A<br>FIXED FEE CONST. CONTRACTS                          | 07/01/68 |
| ER   | 715-1-8     | A-E CONTR. ADMIN. SUPPORT SYSTEM                                                           | 08/01/79 |
| ER   | 715-1-10    | A-E RESPONSIBILITY MANAGEMENT                                                              | 09/30/88 |
| ER   | 1110-1-260  | FIRE PROTECTION POLICY                                                                     | 12/15/81 |
| ER   | 715-1-10    | A-E RESPONSIBILITY MANAGEMENT PROG.                                                        | 09/30/88 |
| ER   | 715-1-6     | A-E CONTRACT ADM. SUPPORT SYST.                                                            | 09/01/89 |
| ER   | 1110-1-8    | REQD. VISITS TO CONSTRUCTION SITES<br>BY DESIGN PERSONNEL                                  | 05/24/80 |
| ER   | 1110-1-262  | CORPS-WIDE TECH. CTRS. OF EXPERTISE<br>ASSIGNED TO DIVS. AND DISTRICTS                     | 07/31/85 |
| ER   | 1110-3-400  | DESIGN OF RECREATIONAL SITES                                                               | 05/31/88 |
| ER   | 1110-3-109  | CORPS-WIDE CENTERS OF EXPERTISE...                                                         | 02/28/90 |

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| ER   | 1110-23-1    | PLNG. ENGR. & DESIGN SERVICES                                | 02/12/73 |
| ER   | 1110-345-100 | DESIGN POLICY FOR MILCON                                     | 01/17/77 |
| ER   | 1110-345-122 | INTERIOR DESIGN                                              | 10/31/89 |
| ER   | 1110-345-700 | DESIGN ANALYSES                                              | 02/19/82 |
| ER   | 1110-345-720 | CONSTRUCTION SPECIFICATIONS                                  | 10/31/89 |
| ER   | 1110-345-722 | DESIGN OF FACS. IN/ON EXPANSIVE SOILS                        | 12/31/80 |
| EM   | 1110-1-400   | RECREATIONAL PLNG. & DES. CRITERIA                           | 07/31/87 |
| EM   | 1110-1-2009  | ARCHITECTURAL CONCRETE                                       | 09/18/87 |
| EM   | 1110-2-3400  | PAINTING, NEW CONST. & MAINT.                                | 06/20-80 |
| EP   | 25-1-1       | INDEX OF PUBLICATIONS                                        | 07/31/89 |
| EP   | 25-1-2       | INDEX OF BLANK FORMS                                         | 09/15/89 |
| EP   | 25-1-5       | INDEX OF GUIDE SPECIFICATION                                 | 05/31/90 |
| EP   | 415-1-261    | CONST. INSPECTOR'S GUIDE, VOL. 1                             | 11/01/81 |
| EP   | 415-1-261    | CONST. INSPECTOR'S GUIDE, VOL. 2                             | 05/01/86 |
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| ETL  | 1110-1-85    | CONCRETE BRIDGE DECK SYSTEMS                                 | 06/30/76 |
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| ETL  | 1110-1-107   | ALTERNATIVE MATERIALS IN PVMT.                               | 07/01/80 |
| ETL  | 1110-1-120   | USE OF SURFACE COATINGS ON ARCH. CONC.                       | 03/21/84 |
| ETL  | 1110-1-124   | DOUBLE BIT. SURF. TRTMT. FOR PVMTS                           | 5/25/84  |
| ETL  | 1110-1-125   | GUID. FOR FUEL RESIST. SEALERS, PVMTS.                       | 05/04/84 |
| ETL  | 1110-1-127   | USE OF FLY ASH IN CONCRETE                                   | 08/17/84 |
| ETL  | 1110-1-130   | NEW JOINT SEALER SPEC. FOR PORTLAND<br>CEMENT, ETC.          | 12/27/85 |
| ETL  | 1110-1-134   | ENERGY EFFIC. @ WTR. PUMPING STATIONS                        | 04/27/84 |
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| ETL  | 1110-1-136   | FRAGMENT RETENTION FOR GLASS                                 | 07/31/87 |
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| ETL  | 1110-2-286   | USE OF GEOTEXTILES UNDER RIPRAP                              | 07/25/84 |
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| ETL  | 1110-3-262   | DESIGN OF ALL-BITUM. CONC. PAVEMENTS                         | 03/22/77 |
| ETL  | 1110-3-282   | ENERGY CONSERVATION                                          | 02/10/76 |
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| ETL  | 1110-3-318   | AIRFIELD PAVEMENT DESIGN                                     | 01/01/88 |
| ETL  | 1110-3-320   | AIRFIELD PAVEMENT EVALUATION                                 | 09/25/80 |
| ETL  | 1110-3-324   | FIRE DETECTORS FOR BACHELOR QUARTERS                         | 08/25/81 |
| ETL  | 1110-3-341   | INSTALLATION OF PERM. UTIL. METERS                           | 05/31/83 |
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| ETL  | 1110-3-354   | DIRECT DIGITAL CONTROL OF HVAC SYSTS.                        | 12/07/84 |

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| ETL  | 1110-3-355 | DESIGN CRITERIA FOR MED./DENTAL FACS.                         | 10/12/84 |
| ETL  | 1110-3-360 | HAZARDOUS WASTE STORAGE CRITERIA                              | 05/15/85 |
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| ETL  | 1110-3-365 | VEH. MAINT. FACS & POLLUTION CONTROL                          | 09/05/85 |
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| ETL  | 1110-3-411 | FOAM FIRE PROT. SYST. FOR ACFT IN HGRS                        | 04/26/90 |
| ETL  | 1110-3-422 | NATIONAL ELEC. SAFETY CODE                                    | 02/23/90 |
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| CE-R | 02.1       | CLEARING & GRUBBING                                           | 07/01/85 |
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| CE-R | 02.18      | LIME STABILIZED SUBGRADE                                      | 07/01/85 |
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| CE-R | 05.1       | STRUCT. STEEL & STEEL JOISTS                                  | 07/01/85 |

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| CE-R  | 09.2   | PAINTING                               | 07/01/85 |
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[NOTE: MORE ABBREVIATED GUIDE SPECIFICATIONS TO FOLLOW, WITH TARGET OF 100 BY END OF CY 1990.]

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| DG   | 1110-3-107 | U.S. ARMY RESERVE FACILITIES     | 09/01/84 |
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| AEI  | -          | DESIGN CRITERIA                  | 07/14/89 |
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☆ U. S. GOVERNMENT PRINTING OFFICE : 1990 O - 279-096





US Army Engineering and Housing Support Center